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VOL. II.—42ND YEAR SYDNEY, SATURDAY, JULY 2, 1955 No. 1

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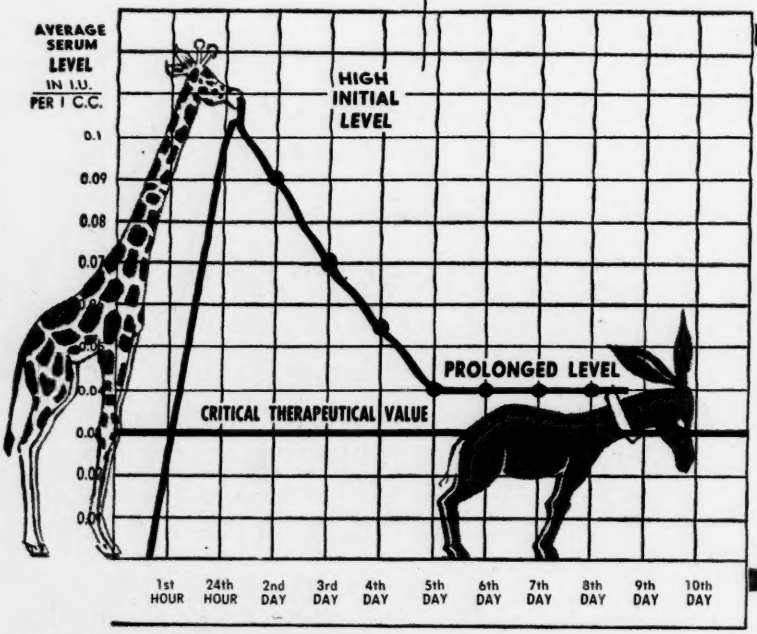

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Table of Contents.

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES—	Page.
The Arthur Wilson Memorial Lecture—Arthur Wilson and His Times, by Sir Arthur Gemmell, M.C., T.D.	1
Unrecognized Sequelæ of Dental Imbalance, by Eric Francis, B.A., B.D.S.	4
Superficial Thrombophlebitis following Intravenous Infusion: A Survey of 100 Infusions at the Royal North Shore Hospital of Sydney, by H. J. *Richards*, M.B., B.S., F.R.C.S.	7
Recent Trends in the Treatment of Fractures, by E. E. Price	9
The Management of Peptic Ulceration, by Grayton *Brown*	12
Carcinoma of the Stomach: A Critical Review, by John Smyth	15
REVIEWS—	
A Synopsis of Medicine	19
Health Through Disease, The Problem of Immunity	20
Reflections on Renal Function	20
Textbook of the Rheumatic Diseases	20
The Skin: A Clinicopathologic Treatise	20
Cerebrovascular Disease	21
Surgical Treatment of Cancer of the Cervix	21
Multiple Sclerosis	22
BOOKS RECEIVED	22
LEADING ARTICLES—	
Ideas and the Present Age	23
CURRENT COMMENT—	
The Active Principles of the Neurohypophysis	25
Acute Nephritis	25
Clinical Aspects of Disseminated Sclerosis	26
Breathing Exercises in Pulmonary Emphysema	26
Viomycin in the Treatment of Tuberculosis	27
ABSTRACTS FROM MEDICAL LITERATURE—	
Therapeutics	28
Neurology and Psychiatry	29
Surgery	29
ON THE PERIPHERY—	
The Village of Banchory-Ternan: Some Memories of Francis Adams and of the Resurrectionists	30
BRITISH MEDICAL ASSOCIATION NEWS—	
Scientific	30
OUT OF THE PAST	33

CORRESPONDENCE—	Page.
The Reserpine Anti-Hypertensive Drugs	33
The Use of PAS in Rheumatoid Arthritis	34
The Pathogenesis of Bronchial Carcinoma	34
Leptospirosis in New Guinea	35
The Advertising of Drugs	35
The Röntgen Oration	35
Hydatid Cyst of the Orbit: Report of a Case	36
Two Cases Resembling Pellagra	36
Compulsory Blood Tests for Alcohol	36
Registration of *Medical Practitioners*	36
Classification of Rheumatoid Arthritis	36
Lip Mucosal Changes in Smokers	36
THE COLLEGE OF GENERAL PRACTITIONERS—	
New South Wales Faculty	37
NAVAL, MILITARY AND AIR FORCE—	
Appointments	37
OBITUARY—	
Archibald John Collins	38
Paul Wanostrocht Mitchell	38
Norman Pern	38
POST-GRADUATE WORK—	
The Melbourne Medical Post-Graduate Committee	38
The Post-Graduate Committee in Medicine in the University of Sydney	39
DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA	39
MEDICAL PRIZES—	
Australian Orthopædic Association's Prize	39
The American Dermatological Association Prize Essay	39
AUSTRALIAN MEDICAL BOARD PROCEEDINGS—	
New South Wales	40
NOMINATIONS AND ELECTIONS	40
MEDICAL APPOINTMENTS	40
DEATHS	40
DIARY FOR THE MONTH	40
MEDICAL APPOINTMENTS: IMPORTANT NOTICE	40
EDITORIAL NOTICES	40

The Arthur Wilson Memorial Lecture.[1]

ARTHUR WILSON AND HIS TIMES.

By SIR ARTHUR GEMMELL, M.C., T.D.,

President of the Royal College of Obstetricians and Gynæcologists, London.

I APPRECIATE the honour done to me in inviting me to give the first Arthur Wilson Memorial Lecture, but I doubt if anyone who did not know Arthur Wilson, such as myself, can really do justice to his memory. To me, however, it is not only a pleasant honour but a bounden duty to do my best, for Arthur Wilson was a foundation Fellow of the Royal College of Obstetricians and Gynæcologists and took an active part in furthering its aims and ideals. All my inquiries show that he was a man of exceptional character and an outstanding obstetrician. Sir William Fletcher Shaw, who has seen and known many of those who practised our branch of medicine in many parts of the world, describes Arthur Wilson as one of the greatest obstetricians he has ever met. In the minds of those who know Sir William Fletcher Shaw this is the highest of praise.

From what I have been able to learn of Arthur Wilson's character, I find that he decided quite firmly what was his immediate aim and then devoted his whole mind and strength to achieve it. He was, however, sweet-tempered and equable, and convinced others by his reasoning powers and not by dominance. Indeed, he won the admiration and love, not only of his colleagues, but of his competitors and rivals.

His devotion to his obstetrical work was virtually proverbial, and his skill was at all times available to every woman in labour who needed his services and to any colleague who sought his advice or help.

His main relaxation was watching cricket matches. But even so his work so dominated his mind that I understand he always went to a match with a pocketful of pennies so that he could keep in touch by telephone with the progress of such patients as were his immediate care.

Let me recall some of the points in his career. As a boy he was left fatherless and won a scholarship to Scotch College in 1902. He devoted himself to his education to such good purpose that he won a scholarship to Ormond College in 1906. Although not a natural athlete, he took an interest in sport and by his perseverance earned places in the football and cricket teams as well as securing a high place in athletics.

The same traits were continued at the University of Melbourne. He qualified high up in the list and obtained "blues" for athletics and football.

[1] Delivered on August 26, 1954, at the University of Melbourne, under the auspices of the Arthur Wilson Memorial Foundation.

XUM

Soon after he qualified he became a resident medical officer at the Women's Hospital, Melbourne. It was here that he came under the influence of R. H. Fetherston. The work he then did, and the stimulation and encouragement he then received, determined his love for obstetrics and inevitably his later career.

Permit me to digress for a moment here to say how much the medical services of the Army in Australia owe to obstetricians and gynæcologists, for we have provided two directors-general in R. H. Fetherston and F. A. Maguire.

In 1915 Wilson married Miss Rita McLeod of the famous cricketing family, but the war soon claimed him and he saw active service with the 3rd Australian General Hospital. He developed typhoid fever and was invalided to England. During his convalescence he spent some time at the home of the Duke of Manchester, but whether at Kimbolton Castle or Bampton Park is uncertain. He was much surprised by the very simple pleasures which obviously gave his Lordship a great deal of enjoyment. In parenthesis, I would remind you that the present Duchess of Manchester comes from Melbourne.

Wilson was then sent to France, and gained an immediate award of the Distinguished Service Order on the Somme. He served for a time in the 9th Field Ambulance under Lieutenant-Colonel F. A. Maguire, but later himself commanded the 7th Field Ambulance.

During this time Wilson was called upon to prepare a report on "the factors which determine the arrangements required for the transportation of battle casualties". This report is fortunately permanently preserved as an appendix to "The Official History of the Australian Army Services". Reading it, I found how much of his character shows in it —his determination, his capacity for getting others to work with him and his clarity of expression. He planned and carried through with the help of many medical officers a careful scheme of recording certain points about wounded men during a particular action, and showed that the most vital factor was the speed with which the patient received expert surgical attention. He suggested that surgeons should go as near to the scene of fighting as possible. This idea was carried out in World War II by the provision of field surgical units.

On his return to Australia in 1919, he went into practice in Prahran, and the next year was appointed to the staff of the Women's Hospital. Now he was fully embarked upon his life's work. There are many references to his work at the Women's Hospital, all of which record his impact on the other members of the staff and his important achievement in welding them into a teaching unit second to none.

In 1926 he was invited to accept the lectureship in obstetrics and gynæcology. I am told that he took a fortnight's holiday and went away to write his lectures, a copy of which he gave to each student. It is a happy thing that these notes are still extant, for Wilson led such a busy professional life that he has not left us a series of papers in our scientific journals. His experience and accumulated wisdom were unrivalled. We are left to learn from these notes how his mind worked. The privilege of reading these lectures has been extended to me, and the reason he was such a successful teacher is clear within them. Sound facts, clearly stated without embroidery, shine through the well-phrased sentences based on a wide clinical experience. Theory is reduced to a minimum. The lectures show a well-marked conservative outlook, and Wilson himself would be happy to know that we are now able to treat, conservatively, degenerating fibroid tumours in pregnancy and that the diabetic mother can be assisted to continue her pregnancy to a successful issue.

Such, then, is a sketch, in broadest outline only, of the man and his work. What of the times in which he lived, which must have touched him consciously or unconsciously? There is an overflow, an epilogue, from the generation preceding his which helped to provide the *milieu* in which he himself worked, and there were events in his own lifetime which changed many things. Time does not permit us to consider them all, and I ask you to accept the material I have selected as being representative only.

It may interest you to know that in the search for pictures to illustrate the following paragraphs I went to the library at Australia House, London, and was looked after by a lady who was anxious to know why I was collecting lantern slides. When I told her, she said quietly: "I will help you all I can; I was one of his last patients."

There were a number of people whose lives overlapped that of Arthur Wilson. If he was not actively conscious of them during their lifetime, each at his or her passing must have evoked some response in his mind, probably an appreciation of what they had achieved for the advancement of civilization in its widest sense.

Let us chivalrously think of some ladies first. Dame Nellie Melba, born here in Melbourne, enriched and charmed

INTRODUCTORY NOTES

ON

LYING-IN INSTITUTIONS.

TOGETHER WITH

A PROPOSAL FOR

ORGANISING AN INSTITUTION FOR TRAINING MIDWIVES

AND MIDWIFERY NURSES.

BY

FLORENCE NIGHTINGALE.

LONDON:

LONGMANS, GREEN, AND CO.

1871.

FIGURE I.

Title page of Florence Nightingale's book "Lying-In Institutions", from the copy in the library of the Royal College of Obstetricians and Gynæcologists, London.

the whole world by her wonderful soprano voice. She was created a Dame of the Most Excellent Order of the British Empire in 1918—an order which was created only in 1917, so she was amongst the earliest to be so honoured.

Florence Nightingale, that marvellous woman, raised nursing a hundred years ago from a menial task to a splendid profession for educated women. Arthur Wilson must many times have given thanks for the wonderful foundations she laid. He may have seen her book on "Lying-In Institutions", a copy of which is in the library of the Royal College of Obstetricians and Gynæcologists in London with her autograph on the fly leaf (Figures I and II).

Carrying on this great tradition was Edith Cavell, who perished so courageously in the first World War. Her final epigram, "Patriotism is not enough", has a message for us today. Within our College we must not interpret patriotism in the narrow sense of the particular country in which we live. We must all work for the common ideal within the Commonwealth.

Another great benefactor was Madame Curie, who with her husband, discovered radium and commenced its introduction into medicine. I cannot discover Arthur Wilson's opinion of the place of this substance in treatment, but he must have realized its potentialities. Now known to be closely allied was the other discovery of X rays by Röntgen. That this means of examination had an important place in obstetrics was well recognized by Arthur Wilson. A number of references to it are made in his lecture books. He would have welcomed the newer and more extended methods of today.

Louis Pasteur through his researches into fermentation, became aware of microorganisms and thereby really introduced the science of bacteriology and the first principles of immunization.

Lord Lister paid full tribute to Pasteur and emphasized how much he had been helped in his development of antiseptic surgery by Pasteur's work.

In the heyday of Arthur Wilson's career we had passed from the era of antisepsis to that of asepsis. I am sure, however, that he would have heartily acknowledged the leap forward in the battle against infection in surgery and midwifery which was signalized by Lister's work. When I was a student my professor of obstetrics and gynæcology—Professor Briggs of Liverpool — had studied under and served as house surgeon to Lord Lister. Professor Briggs was very fond of saying: "Now when I was Lister's House Surgeon we used to do so and so."

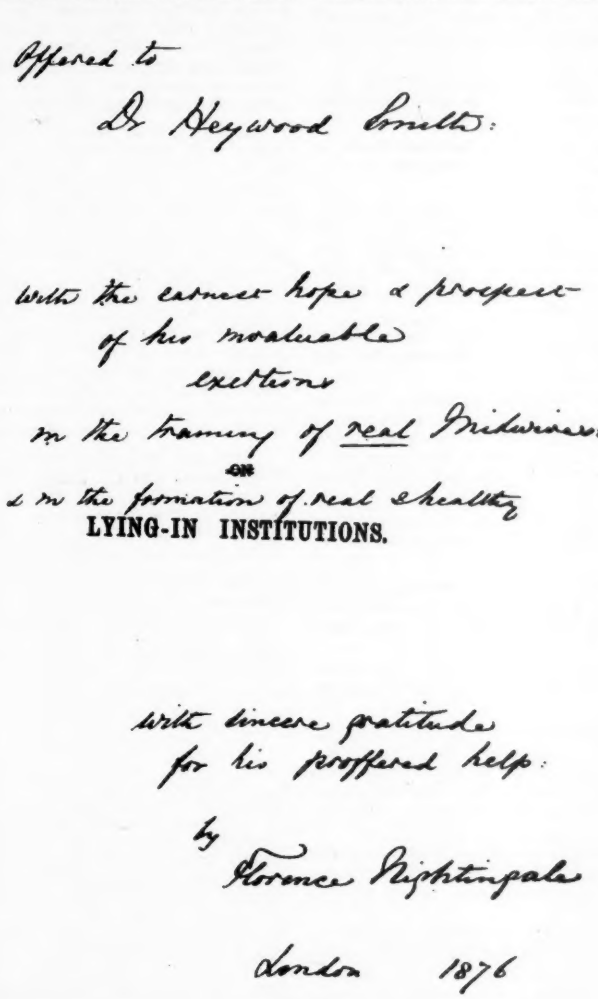
Offered to
Dr Heywood Smith:
with the earnest hope & prospect
of his invaluable
exertions
in the training of real Midwives,
or
& in the formation of real Healthy
LYING-IN INSTITUTIONS.
with sincere gratitude
for his proffered help:
by
Florence Nightingale
London 1876

FIGURE II.
Autograph on fly-leaf of Florence Nightingale's book "Lying-In Institutions", from the copy in the library of the Royal College of Obstetricians and Gynæcologists, London.

Briggs also studied under Sir James Young Simpson. Arthur Wilson, who was himself so interested in the relief of pain in labour, must often have thought back to Simpson's earliest use of chloroform for this purpose.

Medical members of the audience will recall that the use of chloroform in labour became established when it was given to Queen Victoria at the time of the birth of her fifth child, Prince Leopold, in 1853. I am always amused by the letter which Sir James Clark, the Queen's obstetrician, wrote to Simpson a few days after the event. After several paragraphs he suddenly writes:

> I am almost forgetting to notice the chief object of my writing to you, which was to tell you that the Queen had chloroform administered to her during her late confinement . . . It acted admirably. Her Majesty was greatly pleased with the effect.

Now let us look at a quite different medical man—Dr. W. G. Grace—a man who, like Arthur Wilson, loved cricket as well as his work. However, unlike Arthur Wilson, Grace is remembered more for his cricket than for his medicine. Dr. Grace practised in Bristol, but must have spent most of his summers on the cricket field, playing cricket at a time when pitches were very rough and 50 was regarded as a tremendous score. W.G., as he was always called in England, made 126 centuries in first-class games.

Grace played against Sydney-born Spofforth, who was known in England as the "demon bowler". In 1878—admittedly before Wilson was born—Spofforth was playing for Australia against the M.C.C. He took 11 wickets for 20 runs and dismissed the whole M.C.C., including W. G. Grace, for 33 and 19.

We may doubt whether Wilson ever saw Spofforth play, but he almost certainly had the opportunity of seeing that wonderful batsman Victor Trumper. The great kindness of Trumper must have appealed to Wilson. Trumper kept a sports store, and many a time a poor youngster went into his shop with his small savings and came out with his cash refused and a fine new bat. There is a story that on one occasion Trumper picked out a boy's bat, used it in a Sheffield Shield game and made a century with it.

It is certain that Wilson must have seen and revelled in the prowess of that wonderful batsman Sir Donald Bradman. You will not have forgotten that his average in test cricket was 99·9. What a great pity it was that in his last test innings he, incredibly, made a duck, for if he had made only four his average would have been 100. Yet his highest test score of 334 remains a record.

In world events also many outstanding things occurred. In two world wars the common stock of the United Kingdom and Australia, giving allegiance to a single Crown, have fought side by side in a common cause. Let me remind you that before Arthur Wilson's time, in 1885, the people of New South Wales sent troops to fight side by side with

those from the United Kingdom in the Sudan—the first example of soldiers from overseas domains taking the field alongside those raised and trained in the United Kingdom. You will doubtless remember that the Sudanese campaign was the war in which Sir Winston Churchill first saw active service.

I have referred to Arthur Wilson's personal service in the first World War, and I want just to underline Australia's part by recalling two episodes. The first is that gallant invasion of the Gallipoli peninsula which was so nearly a triumph, but which ended in a withdrawal organized and performed in so masterly a manner that there were virtually no casualties during this part of the operation.

At sea the sinking of the *Emden* by His Majesty's Australian Ship *Sydney* was an epic as well as an incalculable service to the Empire.

As in the first World War, so in the second—there is so much that could be said; but time permits me to give you only a few examples.

Again we had an evacuation — from Dunkirk — not methodically planned, as from Gallipoli, but forced upon us by a temporarily victorious enemy. The casualties were grievous, but the wonder was that so many got away. Let us honour the "little boats" and those "old crocks" that gave such magnificent help.

As special examples of the Australian contribution, I would recall the defence of Tobruk and the landings and fighting in British North Borneo.

In the second World War the increased part played by the air forces was a new feature. To emphasize this I would remind you that two members of the Royal Australian Air Force won the Victoria Cross for their work over Europe—Group Captain F. Edwards and Pilot Officer R. H. Middleton.

During this war the enemy endeavoured for the first time to strike at the Australian continent itself when Darwin was bombed.

The atom bomb dropped on Hiroshima probably told us more clearly than any news that the war was coming to its end, but also warned us of the terrible destructive forces which have now been devised.

During the lifetime of Arthur Wilson the world was at one and the same time expanding in one sense and yet contracting in another.

Expansion was demonstrated by an increasing knowledge of the world's surface. For instance, in 1911 Amundsen discovered the South Pole. Only a year later Captain Scott also reached the South Pole, and in 1912 also Mawson's valuable Australian expedition to the Antarctic continent took place.

The contraction of the world is a relative concept sprung from a radical alteration in the time–distance ratio. Aviation has been perhaps the paramount factor in this change.

It was in 1909 that the whole world was stirred, if not startled, by the news that Blériot had flown across the English Channel.

I remember in 1910 one of these early flights. A Mr. Lorraine attempted to fly across the Irish Sea from Holyhead to Dublin. Being on holiday near this starting point at the time, I went to see the start. There were perhaps about 30 people there. At that time aircraft construction was fairly crude, so all the spectators were pressed into service to hang on to a rope attached to the machine's tail whilst Lorraine "revved up" his engine. When he raised his hand we all let go, and off he sailed into the air.

After the first World War there were three epic flights from England to Australia: in 1919 by Ross Smith (twenty-seven days twenty hours), in 1927 by Hinkler (fifteen days twelve hours), and in 1930 by Amy Johnson (nineteen days).

The year 1934 saw the inauguration of an air-mail service between England and Australia. Lord Londonderry, the Secretary for Air, handed a parcel to Sir Kingsley Wood, the Postmaster-General, for carriage by the first air-mail flight. This regular passenger service from Croydon to Australia was commenced in 1935. By these means Melbourne and London are now within four days of each other, whereas at the beginning of the century the voyage took six or more weeks.

Within Australia the development of flying has been used to important medical advantage. The Flying Doctor Service was commenced as long ago as 1928.

The other great force which has annihilated distance is the wireless. Marconi, the great wireless pioneer, died during Arthur Wilson's lifetime. His late Majesty King George V used this invention to link the whole Commonwealth and Empire with himself in his stirring broadcasts; these broadcasts by the Sovereign have now become an accepted part of the Christmas celebrations.

But the Royal House has played a vital part in the closer association of all parts of the Commonwealth. All of you here today must still have a fresh and happy memory of the recent visit of Her Majesty the Queen and the Duke of Edinburgh.

Arthur Wilson must have witnessed other Royal visits. In 1901 the Duke and Duchess of York—later King George V —opened the first Federal Parliament in Melbourne. In 1920 the Duke of Windsor, then Prince of Wales, laid the foundation stone of the Parliament buildings in Canberra. Only seven years later another Duke and Duchess of York —later King George VI and Queen Elizabeth—opened this new Parliament House in Canberra. Another seven years passed, and then the Duke of Gloucester came here to attend the Victorian Centenary Celebrations. He returned in 1945 to become Governor-General.

Thus, during Arthur Wilson's lifetime, the Royal Family, the wireless and the aeroplane have each played their part in drawing Australia closer to the heart of the Commonwealth, and in making this association that living, vibrant entity that the part played by Australian citizens in two world wars has proved it to be.

This brings my rapid survey of Arthur Wilson and his times to a close. I would, however, leave with you as the finest tribute to him and the one which also gives a vivid picture of his character, some words written about him at the time of his death:

> His memorial lies not only in the hearts of all who knew him, but also in the hearts of those innumerable happy and healthy mothers who, in the greatest trial of their lives, had placed themselves so confidently in his gentle hands.

The generation of women who treasure Arthur Wilson's service to themselves personally will inevitably pass. It is therefore pleasing to realize that the Arthur Wilson Memorial Wing of the Royal Society building—dedicated to his memory yesterday and gratefully received by me as the headquarters of the Australian Regional Council of the Royal College of Obstetricians and Gynæcologists—is a permanent memorial to him, and that that memory will be kept fresh and green each time one of these memorial lectures is given.

UNRECOGNIZED SEQUELÆ OF DENTAL IMBALANCE.

By ERIC FRANCIS, B.A. (Queensland), B.D.S. (Sydney),
Brisbane.

THIS article records the result of work carried out by the writer on pain conditions appearing in the face, head and trunk. The pain is frequently referred to in medical terminology as "functional" pain, and the term "fibrositis" is commonly used when the pain occurs in the posterior aspect of the trunk. No organic cause for the pain has been found on medical examination, and no patient has been considered for treatment unless such an examination has been made.

Some seven years ago it was noticed that, in the treatment of symptoms in the region of the ear arising from temporo-mandibular disorder, the patient frequently presented a history of associated headache or pain in the face, neck or shoulder girdle. It was also observed that there was a close similarity in the general characteristics of the pain syndrome in each location.

Of 150 cases, some 100 were recorded as being complete for the purpose of analysis, while the remaining 50 were not included as no follow-up examination was available, although the patients were each treated to the point of complete relief.

Patients who were treated for pain symptoms occurring in the posterior aspect of the trunk presented the following types of pain: stiffness or aching in the muscles, occasionally with spasm; pain in the low part of the back, which might move down the thigh with "sciatic" severity, or pass as far down as the back of the knees, becoming acute when the patient climbed stairs or arose from a chair; pain in the neck, often associated with occipital headache and "crepitus" in the joints; pain and stiffness of the trapezius muscle and in the shoulder girdle, with deltoid pain, often sharp, on lateral raising of the arm; tenderness on pressure of the seventh cervical spine and the tip of the shoulder, and spread of pain down the arm, with stiffness of the fingers in the early morning. These symptoms were not all present at the one time, but might be so in complex cases of long standing.

Headaches were present in a large proportion of cases. They varied in location, being sometimes frontal, sometimes occipital, and even temporal or at the vertex. The pain was usually described as an ache, although its intensity varied. The frontal headache was the most prominent, and was accepted by the patient as something to be endured without complaint when no organic cause could be found and medical treatment was of no benefit. The occipital headache was more severe, and usually resulted in the patient's seeking more than one specialist's opinion in search of relief. Throbbing headache was usually restricted to patients of hyperexcitable temperament, who exhibited complex syndromes when the insult had been prolonged and intense.

Patients presenting facial pain were prominent. These included patients who exhibited pain in and about the ear, a condition of special interest to the oto-laryngologist. The problem of facial pain for which no organic cause can be found is apparently as difficult to solve in medicine as is "fibrositis". Most of the patients who presented this condition had responded unsuccessfully to drug therapy. Several had been subjected to injection or surgical techniques when drug therapy had failed. Some complained of a burning pain extending along the face from the ear to the nose, others of infraorbital pain of a nagging type, or of supraorbital pain extending up over the forehead to the vertex. Severe pain in the zygomatico-temporal area was frequent. Patients could often describe their own pain development, and usually, when the pain was of neuralgic intensity, a clear-cut history could be traced from the initial discomfort up to the stage when the paroxysmal attack arrived; that is, the neuralgic pain was the ultimate result of the lesser pains being allowed to develop unchecked. The writer does not hesitate to conclude, from his clinical observations, that dental imbalance is responsible for a large amount of distressing facial pain, which could have been checked at its inception, or at any stage short of the final switch to trigeminal neuralgia, by application of the treatment evolved from his work. Surgical treatment by section or decompression is available for the neuralgic state, but the ætiology is still unknown. The history and treatment of several patients in varied stages of pain development suggest that this work should not be overlooked. The facial pain often originates in the region of a tooth and later spreads to the maxillary branch of the fifth nerve before settling finally in a terminal distribution as a "nag" or as a pain of neuralgic intensity. Quite a long period of freedom from pain may occur between the appearance of the pain in the tooth and its reappearance in the main division. This type of pain usually displays burning qualities, whether it is located about the tooth or in the maxillary division or prior to its paroxysmal onset.

Beyond these particular symptoms all three groups of pain showed the following common characteristics: they are not associated with any disease or inflammation; they are worst on awaking or after rest; they do not interfere with sleep; the general health of the patient is otherwise unaffected; they are accentuated by emotional disturbance and they flourish in "hysterical soil"; they readily lose their response to drugs; they are changeable in location, long periods of relief often occurring between the positional changes, and, as the syndrome develops, they occur confusingly in all positions at the one time; finally, what is of importance to this article, medical examination reveals no organic cause for them.

However, clinical evidence indicated that there was constantly present a further common characteristic not previously recognized — namely, abnormal function of dental mechanisms. In modern life few people are exempt from this defect. However, the same people have wide variations in their reactions to emotional tension, some reacting more readily than others to "life situations", to which even the most insensitive respond. It is this variation which decides their vulnerability to the effects of dental insult. Women, on this account, are greatly in the majority. In each of the 100 cases considered, a "life situation" or stress factor was operating at the time of onset of the pain. As both the pain and the insult become firmly established without cessation, the symptom complex gains momentum. This is clearly demonstrated in the more complex syndromes, in which abnormal vasomotor and glandular activity are exhibited.

These consistent clinical facts indicated that the primary cause of the "functional" disorders might lie in abnormal dental function, and that the precipitating cause consisted of a stress factor operating on subjects of excitable temperament.

Treatment was directed to this end, and in all cases the restoration of harmonious function in the mouth removed the pain symptoms, although the stress factors in many cases continued in operation. The treatment applied in each case was purely dental, and during the preliminary treatment complete cessation of medical treatment for the chief complaint was urged so as to confirm the diagnosis of dental insult. Unless this produced a change in symptoms the prognosis was considered unfavourable and the treatment was not proceeded with until the patient had had a further medical examination.

The number of successful results of the treatment in all cases was uniformly high. Whenever the symptoms described above were present and the medical examination showed no cause for their presence, removal of the syndrome was readily effected by restoration of harmonious dental function. The preliminary treatment produced a change in pain intensity with consistent regularity, and further treatment removed the whole pain syndrome.

Only four patients did not show complete removal of pain symptoms. In these cases there was an absence of at least one important diagnostic sign, or the patient was suffering from some systemic condition which made a favourable prognosis uncertain. The treatment of these patients was undertaken to remove the chief complaint only, with previous advice to the patient that the symptom complex was atypical.

One patient had allergic rhinitis and was of "hypertensive" personality, with ill-defined pain occurring on the left side of the face. He had an almost complete natural dentition, with edge-to-edge occlusion along the anterior teeth and very heavy occlusion in the left molar area. The preliminary relief of the malocclusing molars quickly relieved the facial pain, but frontal headache, previously slight, was immediately increased in intensity, and the borders of the eyelids became itchy and red. When the malocclusion was restored to the molar area the facial pain returned and the headache and eye symptoms receded. As the patient was creating the maximum insult during bruxism, a special denture was made

to absorb the shock during sleep. The patient reported recently that if he does not wear the guard during sleep or during worrying periods by day, his symptom complex quickly returns.

Another patient had "a slight touch of 'arthritis' of the upper spine", as demonstrated in a medical radiograph. However, treatment removed severe occipital pain, and what was even more worrying to the patient, intense pressure behind the eyeballs, "as if the eyes were being pushed out of the head". This was achieved by insertion of a partial lower denture to restore posterior occlusion and at the same time to check the long history of anterior insult.

The third patient had since youth suffered from "fibrositic" pain. Important diagnostic tenderness was absent and the position of the pain was atypical—that is, it was beneath the third thoracic spine. A bad prognosis was given to the patient before treatment was commenced. Restoration of mouth balance was carried out at the patient's request, but there was no alteration in the pain.

The fourth "unsuccessful" case, which was referred to the writer as being probably "75% hysteria and 25% pain", was extremely interesting, but was never considered as anything more than an experimental test for the involvement of the autonomic nervous system following intense and prolonged dental insult over a number of years. The patient was subject to attacks of pain arising in the right temporal region, quickly passing to the occiput, the neck, and the left lower part of the back, and finally resulting in fatigue and exhaustion necessitating retirement. The right arm "felt heavy and fatigued", and any effort with it, such as writing, induced attacks of pain. Experimental treatment was undertaken by the insertion of new dentures, and relief immediately followed. The patient can now undertake normal pursuits instead of being almost daily disabled.

Despite the obvious connexion between the patient's condition and the effects of prolonged dental insult, this case has been considered as purely experimental, and the permanency of relief is mere conjecture at the present time. The most that can be claimed with any justification is that the original components were probably 75% pain and 25% hysteria. The latter component will most likely prevent permanent and lasting cure.

Discussion.

The clinical evidence discussed in this article was obtained from patients who had been referred by medical practitioners to the writer in the normal course of his dental practice, which contains a large proportion of radiographic and consultant work. The majority of these patients were referred by oto-laryngologists, who were seeking to relieve ear symptoms or facial pain for which they could find no organic cause. When the report on the dental examination suggested that dental imbalance might be the responsible cause, the patients were referred back for treatment. During treatment it was found that those patients who exhibited dental imbalance frequently presented, in addition to the chief complaint, a history of pain in the posterior aspect of the trunk. Comparison of the medical and dental histories in respect to these pain states determines the prognosis. Unless the patients could produce satisfactory evidence that they had recently received medical advice and treatment for the pain, other than for the chief complaint, they were referred for medical examination and report before dental treatment was commenced. This ensured that the pain was not due to any known organic cause.

The results of treatment showed that the patient received sustained relief from both the chief complaint and the associated "functional" pains in the head and trunk. No effort whatsoever has been made to separate pain in the posterior aspect of the trunk from pain occurring in the ear, face or head generally. They have all been treated as arising from functional disturbance which under medical examination could not be attributed to any detectable organic cause. The pains have been considered in groups for convenience only. The investigation has not been directed towards the treatment of any specific medical lesion. It has been confined to pain symptoms and their relation to dental imbalance.

A number of patients have been referred by general practitioners and specialists, other than oto-laryngologists, for X-ray examination or consultant dental opinion in search of an obscure focus for pain conditions for which no organic cause could be found. These patients offered a further opportunity to compare the dental conditions with the medical symptoms for which the X-ray examination and opinion were sought. These cases were used for clinical observations only and not for treatment, unless a request for treatment was received from the doctor concerned. The pains have consisted of the everyday problems of the medical surgery, such as disabling pain in the neck, persistent occipital and frontal headache which leaves the clinician destitute of diagnosis, facial pains of neuralgic intensity for which no cause or conservative treatment is at present available, incapacitating shoulder and arm pain for which injection is but a temporary remedy, and low backache for which radiographic evidence shows no causative abnormality.

Detailed description of the dental treatment is beyond the scope of this article. However, close cooperation between the doctor and the dentist should be preserved during the treatment. For the same reason the dentist should not assume that pain presented by his own patient is necessarily due to dental insult until medical examination has indicated that there is no other organic cause for the pain. Simple treatment should be within the scope of the family dentist; but more specialized treatment is required in complex cases involving the motor and autonomic systems and when generalized stress reactions are present, as more time is required for diagnosis and treatment than can be given by a busy general practitioner.

The conditions that the clinician may expect to find in these patients are as follows:

1. A nervous temperament. To describe the patients as being "neurotic" or "hysterical" is the retreat of a defeated diagnostician. The patients, on removal of the dental insult, revert to persons of sane, practical, normal type.

2. A history of more or less recent worry or of a "life situation". This is the basic cause of bruxism.

3. A maloccluding dentition with either natural or artificial teeth. The clinician, of necessity, must be familiar with normal occlusion.

4. In facial pain, severity of insult in one or more teeth; in headache, excessive occlusion of teeth in corresponding areas of the mouth; in pain in the trunk, shearing action of teeth especially on lateral grinding action.

5. An obviously healthy condition of the gums and the mouth generally.

6. A display, in radiographs, of strong alveolar support for the teeth, in direct contrast to the destructive effects of pyorrhœa.

7. A history of difficult extractions. This is the main reason why extractions should be avoided in the presence of facial pain, as they may precipitate major forms of neuralgia.

If the clinician suspects dental insult as a result of this examination he should seek the advice of a dentist, who will apply a preliminary test by relieving the maloccluding area. If the pain symptoms alter, the diagnosis is confirmed and the prognosis is good. Dental treatment after the preliminary tests consists of the restoration of normal function by the grinding down of excessive occluding points or by the insertion of dentures to remove imbalance. In complex syndromes more detailed approach is necessary, as more than the dental problem is involved and special dentures must be constructed to overcome specific difficulties. In general terms, treatment consists in the restoration of harmonious function in the mouth. This varies according to the insult. Wholesale extraction of teeth is a destructive attack on the problem and is not to the credit of either profession. Treatment should consist entirely of restoring the mouth to full function. It should have only beneficial results, even if the pain symptoms do not disappear owing to a faulty diagnosis.

The uncertainty which has existed regarding the ætiology and treatment of these pain conditions is manifest in authoritative literature.

An effort to solve the problem of "fibrositis" was made in 1953 at the annual meeting of the British Medical Association held at Cardiff (1953), when a plenary session was held to discuss the subject. There was so much disagreement on the ætiology and even on the actual existence of the ailment that the only decision arrived at was to continue with the term in its present usage, provided it was always written in inverted commas.

Representative thought in America was stated in a primer issued by the American Rheumatism Association (1953). They divided non-articular rheumatism into generalized and localized types for convenience only, as they considered that the ætiology of all types was either varied or completely unknown.

Tegner (1950), Copeman (1950), Rose (1954) and Knowles (1951) are but a few who have contributed to the literature on this subject in an effort to sift out the confused thought surrounding its origin.

Wolff (1948) published a classical work on the subject of headache and facial pain. Despite his wide knowledge on this subject, there still remained a number of atypical headaches to which he could ascribe no cause, and pain occurring in the face which could be given no particular ætiology.

A tentative concept of pain development has been centred mainly about the work of Lorente de Nó (1938) on neural circuits, and on the recent publications of Eccles (1953) on synaptic transmission, and of Hardy, Wolff and Goodell (1952) on pain mechanisms. In a nervous type, subject to the effects of dental imbalance, and suddenly faced with a "life situation", the central disorder is augmented by the emotional upset which results in increased pain perception. Selye (1950) provides the theoretical background to the formation of the complex syndromes arising from defence and adaptive reactions to the stress factors which have arisen. That dental investigation should have exposed this "blank space" in medicine is consistent with the belief of Norbet Wiener (1952), that "the most fruitful areas for the growth of the sciences were those which had been neglected as a no-man's land between the various established fields".

Summary.

A survey has been made of the results of treatment of 150 patients who presented pain in the head, the face and the posterior aspect of the trunk, for which on medical examination no organic cause was found. The work, which extended over a period of seven years, demonstrated that there was a close relation between these pains and abnormal function of dental mechanisms. The symptomatology stated in the text is that presented in the actual case histories of the patients. These symptoms coincide with the recognized symptoms of "fibrositis" and "functional" head and face pains. The clinical evidence showed a common characteristic in all the cases—namely, abnormal dental function. With the removal of this abnormality and restoration of harmonious function to the mouth the pain subsided completely. Four "unsuccessful" cases are detailed. These patients were treated experimentally only and were advised, before treatment was commenced, that their condition was atypical and was unlikely to respond. However, the chief complaint of three of the patients was removed by restoration of mouth balance, while the fourth showed no response, as was indicated by the diagnosis.

The conclusion that arises from this limited number of cases is that many pains occurring in the head and trunk, which have no detectable organic origin, spring from dental imbalance and are effectively removed by the restoration of harmonious function in the mouth.

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SUPERFICIAL THROMBOPHLEBITIS FOLLOWING INTRAVENOUS INFUSION: A SURVEY OF 100 INFUSIONS AT THE ROYAL NORTH SHORE HOSPITAL OF SYDNEY.

By H. J. RICHARDS, M.B., B.S. (Sydney), F.R.C.S. (England).[1]

From the Unit of Clinical Investigation, The Royal North Shore Hospital of Sydney.

INTRAVENOUS INFUSION with its enormous benefits in medicine and surgery carries with it risks which for the most part are annoying and uncomfortable rather than serious.

By far the most common hazard is superficial thrombophlebitis, and this study based on 100 intravenous infusions in 61 patients is an attempt to delineate the position during June, July and August of 1954.

Method.

A visit to the adult male and female surgical wards was made each day, and data were entered on a *pro forma* after the examination of each patient.

The series is not consecutive. About 25% of the cases had to be discarded, mainly owing to insufficient information about the time when a needle was changed from one site to another (for example, during a visit to the operating theatre), and because some short-term infusions were unrecorded.

Classification.

Classification was made as follows: (i) No evidence of thrombophlebitis. (ii) Thrombosed vein; the vein was palpably indurated, sometimes there was a little tenderness, but no redness was noted. (iii) Mild thrombophlebitis; the vein was palpably indurated, and there were redness and generally tenderness confined to its course. (iv) Severe thrombophlebitis; the vein was palpably indurated and there was cellulitis spreading from it. Quite early in the survey attempts to separate moderately severe and severe cases were abandoned owing to the large number of borderline cases. (v) Cellulitis without evidence of thrombophlebitis. This is represented by two instances in which cannulæ were inserted in a "cutdown" at the ankle; cellulitis extending mainly onto the sole of the foot was noted on the fourth day, and the infusion was discontinued on this account. No tenderness, redness or induration was noted along the course of the saphenous vein, and so these cases were put in a separate category and regarded rather as wound infections than as examples of thrombophlebitis.

Clinical Picture.

The Upper Extremity.

In the upper extremity the majority of infusions were given by needle into the forearm (see Table I), and here a characteristic picture emerged.

The mildest reaction was a palpable indurated vein without redness, but sometimes accompanied by slight

[1] Retail Traders' Association Fellow in Vascular Surgery.

tenderness. When observed in a case in which the infusion had recently ceased spontaneously, owing presumably to a clot, the induration spread as a rule from where the needle point lay in the vein either to the elbow joint or to a proximal piece of constricting strapping. Twenty-four hours later it was often noted that the induration had spread down to where the needle had punctured the skin or lower. It did not spread proximally very often, but when it did it spread to where the vein involved joined the basilic or cephalic vein in the lower third of the forearm.

Sometimes some overlying redness was evident as well at the next visit twenty-four hours later, and these cases were reclassified as thrombophlebitis instead of thrombosed vein; but on only two occasions (consecutive infusions given to the same patient) was progression noted from thrombosed vein to the more severe degrees of thrombophlebitis. As a rule progression was only slight.

TABLE I.
Site of Infusion.[1]

Site.	Number of Infusions.
Forearm	56
Cubital fossa	16
Dorsum of wrist	16
Saphenous vein at ankle	12
Total	100

[1] The 12 infusions given into the saphenous vein were given through a Hamilton Bailey cannula. The remainder were given by needle.

The next degree, mild thrombophlebitis, had exactly the same distribution as above. In the majority of cases mild thrombophlebitis appeared and the infusion stopped spontaneously. The needle was removed, and the lesion progressed but little.

In some, however, the infusion did not stop spontaneously, and in these cases spreading cellulitis developed which continued to spread until the infusion had been taken down, but generally did not progress much once this was done. These were classified as severe thrombophlebitis.

TABLE II.
To Show that the Occurrence and Severity of the Reaction Vary with the Duration of the Infusion.

Days.	Infusions at Risk.[1]	Stopped. No Evidence of Thrombophlebitis.[1]	Thrombosed Vein.	Mild Thrombophlebitis.	Severe Thrombophlebitis.	Cellulitis. Probably No Thrombophlebitis.
<1	100	14 (14·0%)	6 (6·0%)	4 (4·0%)	0	0
1–2	76	15 (19·8%)	7 (9·2%)	12 (15·8%)	3 (4·0%)	0
2–3	39	2	3	7	2	0
3–4	25	1	2	6	4	2
4–5	10	1	0	3	2	0
5–6	4	0	0	0	2	0
6–7	2	0	0	0	2	0
Total	..	33 (33·0%)	18 (18·0%)	32 (32·0%)	15 (15·0%)	2 (2·0%)

[1] "Infusions at risk" means the number of infusions that were still running at the commencement of the day in question. "Stopped. No evidence of thrombophlebitis" means an infusion that stopped spontaneously or was stopped for any reason and produced no clinical evidence of thrombophlebitis.

The Lower Extremity.

Only twelve infusions were observed in the lower extremity (see Table II), and each one was delivered through a Hamilton Bailey cannula via a "cutdown" on the long saphenous vein at the ankle. The most striking clinical feature again was that in the cases in which severe thrombophlebitis developed, signs of mild thrombophlebitis were seen twenty-four to forty-eight hours before the infusion was discontinued. After the removal of the cannula, little progress was observed in the lesion.

The earliest sign of thrombophlebitis was redness and tenderness in the middle part of the leg at the medial border of the tibia.

Ætiology.

Horvitz *et alii* (1943) showed experimentally in dogs that the intravenous infusion of hypertonic and acid solutions was a potent cause of thrombophlebitis.

Bolton Carter (1951) related the clinical incidence of superficial thrombophlebitis following infusions through red rubber tubing to the duration of the infusion, and suggested that the site be changed every eight hours. Handfield-Jones and Lewis (1952) confirmed Bolton Carter's work, and showed furthermore that the incidence could be much reduced if "Latex" rubber was substituted for red rubber in the giving set.

It is thought that the main underlying cause in this series is also chemical irritation from substances in the infusion or extracted by the fluid on its way through the giving sets. This is not to say that some few cases may not indeed be due to bacterial infection; but the majority do not behave as if this was the cause, for the following reasons: (i) None of the inflamed veins in this series progressed to suppuration or caused pyæmia. (ii) It was noted as a rule that, with the exception of the two infusions given to the patient cited above, the inflammation progressed little once the infusion was discontinued. (iii) Most of the patients were receiving antibiotics. (iv) Wound infection of a "cutdown" at the ankle was seen twice without evidence of tenderness, induration or redness in the line of the saphenous vein. In other words, infection of the wound can apparently occur independently of thrombophlebitis. (v) The occurrence and severity of the reaction are related to the duration of the infusion and the amount of fluid infused (see Tables II, III, IV and V).

TABLE III.
Comparison of Reactions Occurring in Infusions Discontinued During the First and Second Twelve-Hour Periods.

Duration of Infusion. (Hours.)	Number of Infusions.	No Reaction.	Thrombosed Vein.	Mild Thrombophlebitis.	Severe Thrombophlebitis.
0–12	7	6	1	0	0
12–24	17	8	5	4	0

Other Factors in Ætiology.

Stasis.—In infusions given into the forearm, the upper limit of the reaction when it was first observed was determined as a rule either by the elbow joint or by a piece of constricting strapping. When the reaction did spread upwards, as it sometimes did twenty-four hours later, it did not spread further than the junction of the involved vein with either the basilic or cephalic vein, where presumably the blood flow was faster.

Fluid Infused.—Almost all infusions were of one-fifth normal saline and 4% glucose solution in distilled water, often with varying amounts of blood, normal saline and 5% glucose solution in distilled water. In some infusions potassium chloride was administered. Very few patients received one type of fluid only, and no conclusion can be drawn from this series as to the influence on the lesion of the fluid administered.

Type of Tubing.—As was shown by Handfield-Jones and Lewis (1952), the use of red rubber tubing led to a high incidence of thrombophlebitis as compared to "Latex" tubing. In this series "Latex" tubing was invariably used.

Site.—It is a common impression that thrombophlebitis is more frequent after a "cutdown" at the ankle. Although

the figures are too few to allow a definite conclusion to be drawn, Table IV suggests that, although this is so, it is again a function of the duration of the infusion. In other words, had the four infusions that continued for four days and upwards been concluded on the third day, the incidence of severe thrombophlebitis might have been *nil*.

Prophylaxis.

It is indeed amazing that one can infuse such large quantities of fluid into a vein without serious consequences in every case, and undoubtedly the ideal would be a completely non-irritating fluid and tubing from which no irritating substances could be extracted by the fluid. It may be that siliconed tubing will fulfil this latter criterion.

TABLE IV.
Showing the Influence of Duration of Infusion in "Cutdown" at the Ankle.

Days.	Infusions at Risk.[1]	Stopped. No Evidence of Thrombophlebitis.[1]	Thrombosed Vein.	Mild Thrombophlebitis.	Severe Thrombophlebitis.	Cellulitis. No Thrombophlebitis.
<1	12	1	0	0	0	0
1–2	11	1	0	2	0	0
2–3	8	1	0	0	0	0
3–4	7	0	0	1	0	2
4–5	4	0	0	0	1	0
5–6	3	0	0	0	2	0
6–7	1	0	0	0	1	0

[1] "Infusions at risk" means the number of infusions that were still running at the commencement of the day in question. "Stopped. No evidence of thrombophlebitis" means an infusion that stopped spontaneously or was stopped for any reason and produced no clinical evidence of thrombophlebitis.

Table V shows the average time when the thrombophlebitis was first noted, as determined by an examination at 10 a.m. each day, compared with the average duration and amount of infusion for each type of lesion.

The most striking points are the following: (*a*) The severity of the lesion increases with the quantity and duration of infusion. (*b*) The time when mild thrombophlebitis, and thrombophlebitis which had become severe,

TABLE V.
To Compare Duration of Infusion, Quantity of Fluid Administered, and the Time the Reaction was First Noted.[1]

Reaction.	Average Quantity of Fluid. (Ounces.)	Average Duration of Infusion. (Hours.)	Average Time Lesion First Noted. (Hours.)
None: 33 infusions ..	118	28	—
Thrombosed vein: 18 cases	*153*	*37*	*59*
Mild thrombophlebitis: 32 cases	196	52	53
Severe thrombophlebitis: 15 cases	309	90	50

[1] The two cases mentioned above of cellulitis without evidence of thrombophlebitis are excluded from this table.

were first noted was roughly the same. (*c*) The average duration of the infusion in the case of mild thrombophlebitis coincided with the average time of onset of the lesion in all infusions. In other words, the infusion was discontinued or stopped spontaneously on the appearance of thrombophlebitis. (*d*) In the case of severe thrombophlebitis, an average of forty hours elapsed before the infusion was discontinued after the lesion had been noted. During this time inflammation was already obvious and progressing.

A thrombosed vein and mild thrombophlebitis, while a nuisance to the resident medical officer who may have to find another vein, and a discomfort to the patient who has to withstand another onslaught with a needle, did not retard the patient's progress.

On the evidence presented, it is thought that, if the site of the infusion was changed when warning signs appeared, the incidence of severe thrombophlebitis would be cut to almost nothing. These signs are as follows: in the forearm, slight redness and tenderness appearing just above the needle point where it lies in the vein; in the leg, similar signs appearing in the middle third at the medial border of the tibia.

Summary.

The local clinical reactions to 100 intravenous infusions are discussed.

Indirect evidence is presented confirming previous work showing that superficial thrombophlebitis in these circumstances is usually due to a chemical irritant.

It is suggested that if infusions are discontinued when mild inflammation is apparent, the severe degrees can be avoided.

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RECENT TRENDS IN THE TREATMENT OF FRACTURES.[1]

By E. E. PRICE,
Melbourne.

WHILE collecting my thoughts on the subject of this paper, I have repeatedly been made to realize that it is difficult to say precisely what is "recent" and what is a "trend". I propose to deal rather loosely with the subject, and allow my personal views to intrude on the controversial matters.

GENERAL PRINCIPLES.

The general treatment of fractures can be summarized as the "three R's"—reduction, retention and reeducation. All methods of treatment can be reduced in principle to five, as shown in Table I.

Certain recent trends can be stated at this stage.

Manipulation and Application of a Plaster Cast.

The essential points of this method of treatment are immediate reduction of the fracture, under general anæsthesia, with X-ray control, and the application of a skin-tight plaster cast.

I am a firm believer in immediate reduction of fractures provided full facilities are available. No scorn should be spared for those who wait for the swelling to go down, though we have sympathy for the man who puts off the operation till he can have some sleep.

Occasionally facilities for X-ray diagnosis and post-operative management may be unsatisfactory. If that is so, the surgeon may well decide to delay his reduction until this can be remedied.

The question of the skin-tight plaster cast has always proved most controversial. There is undoubtedly a trend at the present time away from the skin-tight cast as advocated by Charnley. Thus some use padded casts, and some even slabs and bandages.

I feel sure that this trend is retrograde and stems from a lack of ability to put on a skin-tight cast. This admittedly takes a little skill and practice—but not too much.

[1] Read at a meeting of the Victorian Branch of the British Medical Association on March 26, 1955, at Warrnambool.

Skeletal Transfixion.

At one time (in the period from about 1944 to 1946) skeletal transfixion and internal splints were widely advocated, especially by Roger Anderson. This method is not often employed now, as it is just as hazardous as internal fixation; but it is still of value in fractures of the jaw, and in modified form for the treatment of unplatable fractures of the tibia and for bone lengthening.

Traction.

The use of traction is now confined to fractures of the femur and of the cervical part of the spine. For sites where it was previously used, more satisfactory methods exist.

Open Reduction.

Open reduction of fractures has of course been the most striking trend since the war. It has been facilitated by the introduction of antibiotics, of non-magnetic metals and of precision surgical tools.

Open reduction and internal fixation provide two general advantages—(i) accurate reduction, (ii) simplified after-care. These advantages are especially desirable in the following special circumstances: (*a*) for fractures which separate, (*b*) for multiple fractures in one limb, (*c*) for compound fractures.

TABLE I.

Five Methods of Treatment of Fractures.

Reduction.	Retention.	Type or Site of Fracture.
Manipulation — immediate.	Plaster cast.	Pott's fracture, fracture of the forearm.
Manipulation — immediate.	Skeletal transfixion.	Mandible, *os calcis*.
Traction—gradual.	External splinting.	Shaft of femur, cervical part of spine.
Open—delayed.	Internal fixation.	Olecranon, compound fractures.
Excision—delayed.	——	Patella, subcapital neck of femur.

The original means of fixation was by plate and screws. It has to be admitted that this method leads to a slightly higher percentage of slow union and non-union. This can be attributed to the necessary denudation of the bone ends, and to the tendency of the plate to be bent slightly during the application of the screws, so that the fracture is opened slightly.

This difficulty has led to the introduction of modified plates, such as Townsend-Gillfillan and Eggers plates; but such plates have not become popular. The trend is rather towards intramedullary fixation, with various forms of appliances. The one most generally used is the Kuntscher nail, but Smith-Petersen nails and Kirschner wires are used in special places. My own tendency has been to prefer the Kuntscher nail for the upper two-thirds of the femur, for the upper half of the ulna and in a few irregular situations.

Occasionally, the internal fixation may be effected by a chromicized catgut suture, which is often used for children, or by a wire suture or simply by transverse screws.

Excision.

Union by bone takes a fairly long time and frequently leaves the region enlarged or irregular. These disadvantages can be eliminated in the case of small fragments by simply removing them.

This has been practised for many years with the patella. It is also now being used with advantage in the neck of the femur and the elbow.

FRACTURES OF THE SPINE.

The management of fractures of the spine is determined partly by the localization of the fracture and partly by the degree of cord damage.

Cervical Part of the Spine.

It has been realized in the last few years that extension injuries are more common than was previously realized. In such cases, the anterior common ligament is ruptured, so that attempts to treat the fracture by hyperextension or traction may actually make matters worse. Such injuries tend to be accompanied by severe paraplegia.

With regard to flexion injuries, as compared with injuries elsewhere in the spinal column, cervical injuries are peculiar in the frequency with which the disk takes the brunt of the damage, and the body escapes. Further, full dislocation of the facetal joints is common, particularly when paraplegia is present. These points are important in the management of the case.

We can recognize the following three degrees of displacement.

Crush Fractures.

Crush fractures require hyperextension; traction has no place except as temporary treatment. That is to say, skull traction is applied if there is any uncertainty about the diagnosis, or if paraplegia also exists. However, the definite treatment of the bony injury is by the application of a hyperextension cervical jacket.

Subluxation.

The first point about subluxation is that it may be readily overlooked unless the neck is examined in both flexion and extension. Symptoms are usually slight, and treatment may not be sought for some days.

The second point is the disappointing manner in which displacement recurs when fixation is discarded. This is not always the case, and even if it happens the final clinical result may be satisfactory. Obviously, late spondylitis is to be expected.

The situation is more ominous if cord symptoms exist at any stage, and radical treatment may be justified on the lines described below.

Dislocation.

When the facetal joints are dislocated, simple hyperextension cannot succeed. It is necessary to apply skull traction and to prevent extension until the facets have slipped into position. This may require considerable traction, of up to 30 pounds perhaps, and must be accomplished quickly, over twelve hours or so, under X-ray control. Once dislocation has been reduced, the big weight must be reduced to six to eight pounds of comfortable traction, when hyperextension may be allowed.

At this stage the patients fall into three categories—those with no paralysis, those with severe paralysis and those with incomplete paralysis.

No Paralysis.—Patients without paralysis are managed as those with subluxations, and are allowed up in a cervical jacket.

Severe Paralysis.—Patients with severe paralysis are unlikely to do well. They are maintained in traction for four to six weeks, in the hope of improvement, and this can very well be done on a Brewer bed. Commonly they succumb to bladder, lung or skin complications; but they may survive and their disposal becomes a difficult problem. They can seldom be got out of bed because of dyspnœa, or take part in any useful occupation as their hands are usually paralysed.

Incomplete Paralysis.—If the paralysis is partial, some recovery will also occur, and it may progress to a satisfactory level. It is in just this class that the tendency to recurrence of deformity is a problem, since paraplegia has been known to recur also. In these few cases we have recently performed an early spinal fusion. It is fair to call this a "trend" only. The operation is technically extremely difficult.

Thoracic Part of the Spine.

Fractures of the relatively fixed part of the spine from the third to the ninth thoracic vertebra are splinted by the thoracic cage and need no special treatment.

Lumbar Part of the Spine.

Crush Fractures.

A majority of lumbar spinal fractures are simple wedges or the separation of a superior marginal fragment. The trend in these cases is to disregard the deformity and to treat the patient by rest in bed with hyperextension exercises until the lesion is no longer painful.

If the deformity is more severe or the bone more comminuted, the Watson-Jones method is followed.

Fracture-Dislocation.

Although fracture-dislocation is rare it is important, since reduction is probably impossible without open operation. When open reduction has been accomplished, the deformity shows a disconcerting tendency to recur at once. The application of the Wilson spinal type of plate with the use of two plates and bolts is very satisfactory.

FRACTURES OF THE PELVIS.

Watson-Jones has shown that fractures of the pelvis are of two main types—lateral crushes and antero-posterior crushes.

Lateral crushes result in fractures through the obturator foramen, and are readily treated with the patient in the dorsal recumbent position.

Antero-posterior crushes result in varying degrees of fracture dislocation of one hemi-pelvis. These patients cannot be treated in simple dorsal recumbency, for in that position the dislocation is maximal.

While it is true that these injuries will be reduced with the patient in lateral recumbency, this method has not been generally adopted for reasons of practical difficulty. The generally accepted method is that of the canvas sling introduced by Astley Cooper, and this is quite adequate for the minor degrees and for some major displacements. However, the method sometimes fails to reduce the displacement, and is very uncomfortable.

The line of separation runs at varying planes between the *symphysis pubis* and the sacro-iliac joint. One common type is disruption of the *symphysis pubis*, and this type lends itself to open reduction and internal fixation with a plate. The operation presents certain technical difficulties, but these can be overcmoe. Treated in this way, the patient is at once comfortable, which is in striking contrast to his previous condition.

FRACTURES OF THE FEMUR.

Shaft of the Femur.

The great majority of fractures of the femoral shaft can be adequately treated by the classical method of traction in a Pearson-Thomas splint. Skeletal traction is essential.

Occasionally it is not possible to secure adequate reduction, and then open reduction is needed. Usually one then finds that muscle has been impaled and lies between the bone ends. Again, fractures in the upper third are notoriously difficult to align, because of the arrangement of the muscle pull.

I prefer the postero-lateral approach along the intermuscular septum for fresh fractures, as it preserves the quadriceps. It is difficult to apply two plates by this approach, and I prefer to use a Kuntscher nail in the upper two-thirds. The following practical points must be observed: (i) The nail used is one and a half inches shorter than the length of the sound femur from trochanter to knee. (ii) The shaft must be drilled at the level of the isthmus by a long Cleveland drill of size appropriate to the nail used. (iii) The nail is introduced through the fracture site in a proximal direction, but head first, and then driven down to the knee region. (iv) X-ray control is advisable.

Supracondylar Fractures.

The supracondylar fractures are frequently T-shaped, and constitute a formidable difficulty if treated by a closed method. It is preferable to expose the fracture from the lateral aspect and reassemble the fragments on a Blount blade-plate. There are some definite difficulties about this operation also.

FRACTURES OF THE FEMORAL NECK.

Subcapital Fractures.

Treatment of subcapital fractures by the Smith-Petersen nail ensures a good convalescence for these patients; but when patients are followed up it is found that the result is unsatisfactory in a large proportion of cases. The fundamental causes can be simply stated as follows: (i) technical faults of all sorts; (ii) avascular necrosis; (iii) senility of bone.

Thus we see that non-union is inevitable in a proportion of cases, and this increases with age. Further, these older patients are precisely those who cannot tolerate the protracted convalescence which may be needed to increase the proportion of union.

This class of patient is strikingly benefited by the bold policy of removing the femoral head and replacing it by an acrylic prosthesis. In this way the convalescence is reduced to three weeks. It is true that some viable femoral heads will be sacrificed, but the results are good enough for this risk to be accepted. It should be clearly understood that bony union is the best result, and that acrylic prosthesis is recommended only for those cases in which bony union is unlikely.

In our practice, patients aged under sixty years are treated by insertion of a nail unless the joint is previously arthritic. Those aged over eighty years receive a prosthesis. In the group from sixty to eighty years judgement must be exercised, more particularly concerning the vitality of the patient.

The operation is performed from the front, and is one of those procedures which is only just possible within the exposure permissible. One important factor is the length of the neck remaining. This must be of sufficient length to take a cap, which is not always the case. It is always shorter than in cases of osteoarthritis, so that the fit of the prosthesis may be unstable.

Slipped Epiphysis.

Three grades of slipped epiphysis are recognized: (i) pre-slip, (ii) sudden slip, (iii) slow slip.

In pre-slip, the caput is loosened, but displacement is minimal. This proceeds to sudden slip, in which displacement becomes complete with sudden disablement, or alternatively to slow slip, in which the deformity occurs insidiously.

Treatment by traction or the application of a plaster cast is much less satisfactory than the passing of a Smith-Petersen nail. In the case of pre-slip, no more is required, and walking can be permitted in three to four weeks. In the sudden slip case, the deformity must first be reduced, but this is possible only during the first fourteen days or less. In the case of irreducible slip, and of slow slips, it is still necessary to "spike" the caput with a nail, and the deformity is corrected vicariously through a subtrochanteric osteotomy.

FRACTURES OF THE OS CALCIS.

Fractures of the *os calcis* are of varying severity, and those in which there is more than a minimal displacement present a considerable problem in management.

The simple fissured fractures can be treated by plaster fixation, or even by bed rest for six weeks or so.

In badly displaced fractures the poor result arises from the following four factors: (i) tender heel, due to loss of the normal angle of the *os calcis* as well as to contusion; (ii) pain below the fibula due to the valgoid spread heel pressing on the peroneal tendons and malleolus; (iii) painful stiff forefoot; (iv) subastragaloid and mid-tarsal arthritis, due to joint deformation.

XUM

The management best suited to the problem is to make the heel of reasonably good shape, without worrying too much over the joint surfaces. This is done by driving a strong Steinmann pin up the axis of the heel (care being taken to slit the skin at the point of entry). The massed up bone beneath the malleolus is then flattened by hammering over a pad, and the heel is pulled down into position by the pin. The foot is kept in a plaster cast in this position for six weeks. The pin is then removed, and as soon as this wound is healed the subastragaloid joint is fused by inlay.

Sometimes the mid-tarsal joint must be fused also, and sometimes it may not be necessary to fuse the joints at all.

FRACTURES OF THE ELBOW.

One definite recent trend in fractures is the increasing number of compound injuries to the right elbow, known as "baby-car" or "side-swipe" fractures. Such injuries are always associated with gaping wounds in the skin and severe crushing of skin and muscles, and danger of damage to nerves. The results of treatment of such appalling injuries are naturally not good.

The main incidence of the fracture may be on the shaft of the humerus or ulna. In that case the bones can often be reassembled around a small-calibre Kuntscher nail. It is essential to drill the channel for these nails through the cancellous tissue.

When the main incidence of the fracture is on the components of the joint itself, it seems better to produce a deliberate arthroplasty. Careful reassembling of the lower end of the humerus has been tried a number of times, and the result has always been a very stiff elbow. Better results have followed removal of the lower end of the humerus, provided that the olecranon is preserved, if this is at all possible.

COMPOUND FRACTURES.

The controversy about compound fractures has become somewhat stale, and the antagonists have retired to their own practices, unconvinced by argument. However, it may be as well to restate our position with regard to the treatment of recent compound fractures examined within eight to twelve hours. The following principles should be observed: (i) surgical *débridement* of damaged skin edges and expendible soft tissue and bone; (ii) internal fixation if practicable—some fractures are quite unsuited to internal fixation, especially if there is much comminution; (iii) complete skin cover, including the application of a split skin graft; this step is very difficult to carry out unless the fracture has been stabilized by internal fixation; (iv) antibiotic cover.

NON-UNION.

The incidence of non-union seems to be higher than formerly. For this there are, no doubt, a number of reasons, among which are the following: (i) The injuries are more severe than previously, and infection and comminution will both delay union. (ii) The anxiety to avoid shortening may lead to many fractures being splinted under conditions of slight distraction. (iii) The increasing use of internal fixation must contribute to non-union by causing loss of the original hæmatoma and by reducing the blood supply of the fragments when periosteal stripping is necessary.

One definite trend is towards the early recognition of non-union. If there is no clinical union at three months, non-union is certainly very likely, and, although further fixation may result in union in a long time, it is wiser to do something to stimulate union.

Weight-bearing, controlled in a splint, may be used to stimulate union, provided union is already present. This measure is not sound if the fragments are demonstrably movable.

The use of compression has recently been advocated for established non-union. This can be achieved by the use of transverse Kirschner wires, passed through the shaft of the long bone, and tightened by an external clamp. I have not myself made use of this particular method, but have found the principle of compression useful in certain special situations.

As a rule, the best stimulus for union is a bone graft. Fashions have changed in this sphere. Packing with bone chips may succeed. In some situations, I have made use of multiple slivers taken from the tibia or ilium and packed around the fracture. However, the trend is once again towards the massive cortical inlay. This is carefully cut to have a definite taper and not parallel sides. It can then be placed in its bed under compression, either by two screws or beneath a suitable plate.

FUTURE TRENDS.

Modern traffic and modern industry, to say nothing of modern warfare, are providing the medical profession with injuries of great severity, which was not formerly the case. Thus we have now to deal frequently with grossly compound fractures, severely comminuted fractures, multiple fractures and complicated fractures. With this there is also a greater tendency to criticize the handling of the case, not only on the part of the patient, but on the part of the insurance company involved.

It is obvious that the successful management of these injuries requires the best facilities, which must inevitably tend towards the segregation of these patients in a fracture service. In a public hospital, the very volume of cases makes this desirable, since they crowd out the general surgical and "cold" orthopædic cases. Again, it must be admitted that to treat severe injuries successfully, and to get maximum results with the simpler injuries, require special training. Finally, the technical assistance required to deal with these cases is tremendous. It includes not only costly and cumbersome radiological equipment, but a first-class operating theatre stocked with a multiplicity of nails, screws, plates and other fracture gadgets. To this must be added anæsthesia and resuscitation, and the availability of head surgeon, chest surgeon, plastic surgeon and even a general surgeon. Nor must we overlook the need for rapid ambulance work and transfer to the place of treatment.

All this "set-up" is what is implied in a fracture service, and clearly this can be obtained only at a base hospital with adequate financial backing. I do not see how this can be done in Australia except by government funds, although the large insurance companies might find it profitable.

What applies to severe trauma cannot be said to the same extent of minor injuries, but it is only a matter of degree.

The future trend, therefore, is clear. The treatment of fractures must be carried out entirely in large base hospitals in the fracture service. There fractures will be handled by men, preferably young men, who will be specially trained and specially interested in this type of work.

THE MANAGEMENT OF PEPTIC ULCERATION.[1]

By GRAYTON BROWN,
Melbourne.

PEPTIC ULCERATION has been the special interest in the surgical unit of the Royal Melbourne Hospital in which I work. The following are my impressions after carrying out over 250 gastrectomy operations for non-malignant peptic ulceration (Table I), and also after having had personal communications with gastro-enterologists in Britain, Europe and the United States of America.

There has been a considerable change in views on both the conservative and the operative treatment of peptic

[1] The substance of a paper read at a meeting of the South-Eastern Division of the South Australian Branch of the British Medical Association on July 24, 1954.

ulcer in recent years, and so the time is opportune to give a summary of the present policies in the management of peptic ulceration.

Pathology.

In a study of the macroscopic and microscopic features of the peptic ulcers excised in this series, the considerable chronic inflammatory changes found around the ulcers are most impressive. It is obvious that any healing in this zone will be very slow, and this should be considered when closure of the duodenal stump in the vicinity of a duodenal ulcer is performed, and also in any attempt at local excision of a gastric ulcer when healing of the suture line by first intention is essential in order to lessen the incidence of recurrent ulceration.

TABLE I.

Operation.	Duodenal Ulcers.	Gastric Ulcers.	Total.
Billroth I	94	49	143
Billroth II	75	30	105
Sleeve resections	—	8	8
Total	169	87	256

The gastric ulcers in this series were found mainly along the lesser curvature. It is worthy of note that many of them were in the prepyloric region; in my experience an ulcer situated in this region is not unduly likely to be malig ant. The main surgical problem of gastric ulcer is the v ry high lesser curvature ulcer with its surrounding area of induration which extends up towards the œsophageal orifice.

The duodenal ulcers were found to be situated wholly or partly on the posterior wall in the majority of cases. Even in patients previously operated upon for perforation, in whom the site of the perforation was on the anterior wall, there was usually an extension of the crater over the lesser curvature aspect of the duodenum to the posterior wall. The incidence of multiple ulcers in the duodenum was remarkable, as was also the coexistence of pyloric or antral ulcers in patients whose main ulceration was situated in the duodenum.

I do not propose to discuss peptic ulceration of the œsophagus or in a Meckel's diverticulum.

Diagnosis of Peptic Ulceration.

Although most patients with peptic ulceration have classical symptoms, a considerable number give a rather atypical history. This particularly pertained in some of our patients with a large gastric ulcer who did not complain of severe disability, but just a moderate dyspepsia. In the United States of America the finding of such patients with a vague dyspepsia has been responsible for a routine examination by X ray called a "G.I. Series". This consists of a barium meal examination, cholecystography and a barium enema examination carried out without respite.

A good radiologist can locate most peptic ulcers; but no stomach or duodenum should be regarded as normal because the radiologist reports "nothing abnormal demonstrated". It is the clinician's responsibility, not the radiologist's, if a patient is subsequently found to have a gastric or duodenal lesion.

Gastric ulcer craters are usually demonstrated; but duodenal craters are much more difficult, the radiologist usually suspecting ulceration by local deformity. Ulcer craters which commence more than one centimetre beyond the pylorus may defy detection by even the most meticulous radiologist.

Gastroscopy is most helpful in the management of gastric ulcer, both in diagnosis and in assessing the progress of healing. Moreover, it has been of considerable value in cases of hæmatemesis, in which an ulcer can often be seen despite the absence of a definite ulcer history (Avery Jones, 1947).

The diagnosis of "ulcer carcinoma" before operation, and indeed at operation, can be so difficult that in my opinion a gastric ulcer which is thought to be benign, but which on gastroscopic examination does not show definite signs of healing within a month, should be excised.

Classification of Peptic Ulcers.

It is essential for the purpose of treatment to have a classification of patients suffering from peptic ulceration. In this way some uniformity can be achieved in the selection of patients to be treated conservatively and those to be subjected to surgical excision.

Group I consists of patients suffering from acute or subacute ulceration which will heal with conservative treatment within two months. Surgical excision is not required in these cases. If perforation occurs, oversewing is sufficient, and if hæmorrhage occurs, surgical excision is rarely necessary.

Group II consists of patients who suffer from chronic ulceration which seldom permanently heals, but whose symptoms during recurrences are tolerable with conservative treatment.

Group III consists of patients suffering from chronic ulceration which never permanently heals, and whose symptoms during recurrences are intolerable with conservative treatment and are relentlessly damaging to both their social life and their economic conditions.

Group IV consists of patients who suffer from chronic ulceration with complications which without question demand surgical excision. These complications are stenosis, continuous hæmorrhage, recurrent severe hæmorrhage or perforation.

Conservative Treatment.

Conservative treatment is any treatment which does not involve a gastrectomy operation. The intensity of the treatment will vary with the severity of the symptoms.

It is essential to explain to the patient that the condition is chronic and that the treatment is directed at making his life tolerable and keeping the ulcer healed for as long as possible. He should appreciate that periodic attacks are to be expected and are not necessarily the result of his failing to carry out the prescribed treatment.

These principles and the details of treatment given below have been practised by my colleague Dr. W. E. King in the conservative management of our patients.

Stress.

It is apparent that patients with peptic ulceration suffer much more when subject to emotional or physical stress. It is, therefore, important to persuade patients with this disease to arrange their mode of life to avoid these excesses.

Medication is given to relieve pain. It should be appreciated that drugs do not heal ulcers directly, although by enabling a proper food intake to be maintained and by modifying gastric secretion they may influence healing indirectly. Belladonna combined with a mild sedative has been the most effective medication in our experience. These two drugs have been prepared together in a tablet form by several manufacturers.

The various synthetic "anti-vagus" drugs are also valuable, but are not greatly superior to belladonna.

Alkaline and "buffer" powders are also helpful. Magnesium trisilicate has been used in our cases with satisfaction. Even sodium bicarbonate may be taken for short periods of severe pain, but the patients must have normal renal function. However, it should be avoided if possible or combined with other alkalis in the various well-known combinations.

Buffer gels are also suitable for some patients, but have not been used in our unit as a routine. They should be

avoided in cases of pyloric stenosis or after hæmorrhage owing to the likelihood of constipation.

Full Bed Rest.

For patients with severe pain, or less severe pain when the history is short, complete bed rest is essential. It is preferable for this bed-rest treatment to be in a hospital; but when this is economically impossible, it may be carried out in the home. In cases of severe pain, or early stenosis, it may be necessary to limit food intake to fluids only, with a continuous drip administration of fortified milk in extreme cases. However, full medication with a number 1 ulcer diet and good nursing usually are all that is required.

The patient should remain under this bed-rest régime until he has completely lost all pain and epigastric tenderness, has ceased to pass occult blood in the fæces, and has gained some weight. If the patient is suffering from a gastric ulcer, the gastroscopic appearance may assist in deciding when the ulcer has healed sufficiently to allow the patient to become ambulatory.

Week-end Bed Rest.

Certain patients who are not able to obtain sufficient relief from the ambulatory treatment have been considerably improved by a routine used by Dr. Ian Wood, of the Clinical Research Unit at the Royal Melbourne Hospital. These patients are advised to take complete bed rest during the week-end respite from work. This usually consists of the "full bed rest" routine from Friday evening until Monday morning. After a period of about one or two months of this régime the patient can return to full ambulatory treatment.

Ambulatory Treatment.

The diet should be liberal, provided that the food is easily chewed and is not chemically irritating. Fried foods and heavy puddings should be avoided, as they frequently cause pain, probably by producing pylorospasm. Mid-morning, mid-afternoon and evening nourishment should be taken. Adequate nourishment including fruit, vegetables, and white and tender red meats is important, and for this reason patients should be warned to avoid unconsciously limiting themselves to milk, butter and eggs.

Operative Treatment.

The mortality rate of gastrectomy for peptic ulceration is now sufficiently low not to affect seriously the decision to operate (Brown, 1951).

Patients who are classified as belonging to Group IV—that is, those with severe complications—should, of course, be advised to have surgical treatment.

There will always be some discussion about patients who are classified as belonging to Group III—those who have no complications, but who because of pain are unable to carry on a reasonable economic or social life. The assessment of the extent of the patient's disability cannot easily be defined in a paper such as this. It necessitates observation by a physician over a period of time. It has been my practice to accept these patients for operation only after such an assessment.

Conservative operations, such as gastro-enterostomy, vagotomy, vagotomy with pyloroplasty or gastro-enterostomy and ligation of all gastric arteries, have sufficient criticism from experienced surgeons to prevent them from becoming standard procedures. No one surgeon can have sufficient experience with all these methods, and so I leave their assessment to others.

For simplicity I consider that all forms of gastrectomy in which the stomach is anastomosed to the duodenum should be called Billroth I procedures, and that those operations in which the duodenal stump is closed and the stomach anastomosed to the jejunum should be called Billroth II procedures.

Surgical Treatment of Gastric Ulcers.

There is no doubt that the Billroth I procedure is the best method of dealing with gastric ulcers. The post-operative results are excellent. The recurrence rate is negligible. Tanner, in a personal communication, stated that he had had only one recurrence in over 1000 cases, and that this patient, as one would expect, was a medical practitioner. There have been no recurrences in my series of 87 cases.

The only problem is an extremely high lesser curvature ulcer. The standard method of tackling this problem is by a high gastrectomy of the Billroth II type. This appears to be far too radical, and in my series this ulcer has been dealt with by sleeve resection.

Surgical Treatment of Duodenal Ulcers.

The standard procedure has been to leave all except small duodenal ulcers *in situ* and to close the duodenum proximally, remove a considerable amount of stomach and carry out a Billroth II procedure. The recurrence rate after this radical operation is very small. The problem is the resulting disturbance in physiology which occurs in about 10% of cases, and which has been called "post-gastrectomy syndrome". The term "dumping syndrome" is not descriptive and should be abandoned. This problem is being dealt with in most gastro-enterological centres by two main alterations in the principles of the standard subtotal gastrectomy. Firstly, a Billroth I anastomosis is carried out if possible, and secondly much less stomach is resected. The possible increase in recurrence rate is being handled by vagotomy (Maloney, 1954) or by small doses of X-ray irradiation to the remaining stomach (Brown *et alii*, 1952).

In a series of cases of my own these altered principles have been applied by limiting the resection to the first part of the duodenum and the gastric antrum (Brown, 1954), and patients found before operation to have a high acid curve have been given a course of X-ray irradiation. This procedure was conceived and the operation named "antroduodenectomy" by my colleague Dr. Ian Wood. The results have been recorded elsewhere (Brown and Wood, 1955).

The Management of Severe Peptic Ulcer Hæmorrhage.

The use of the terms "medical" and "surgical" treatment of severe hæmatemesis is misleading. One should rather think in terms of "conservative" and "operative" treatment by the combined efforts of physician and surgeon. The best management of these patients is for them to be examined as soon as possible after their admission to hospital by both surgeon and physician. In the present series the advice of Dr. E. B. Drevermann and his colleagues regarding resuscitation has been invaluable. Continued vigilance of all is required. After forty-eight hours, or before if the patient's condition demands it, a further consultation takes place, and if the patient requires an operation this is the ideal time to perform it.

Factors favouring the decision to operate are as follows: (i) The patient is still losing blood, as shown by aspiration through an indwelling Ryle's tube or from clinical evidence. (ii) The patient has a proven ulcer or a long history suggesting ulceration. (iii) The patient is aged over forty-five years. Compared with younger patients, older patients with arteriosclerosis tend to bleed more profusely and more frequently and do not withstand blood loss well. I am indebted to Dr. W. E. King for his cooperation, and indeed for his insistence on these principles of management of patients with severe peptic ulcer hæmorrhage.

If a decision is made to maintain conservative treatment, continued observation is important so that further hæmorrhage may be detected immediately. It should be realized that after the forty-eight hour period every day makes an operation more hazardous.

The Management of Perforation.

The standard procedure for many years has been immediate operative closure of the perforation by over-

sewing. The mortality rate for this operation has steadily decreased. The general opinion is that this is still the best procedure.

Recently there has been some support for immediate gastrectomy in this emergency, and a low mortality rate has been reported (Lowden, 1952). The reasons against this procedure as a standard method are that it is difficult to have experienced gastric surgeons always available in this emergency, and that the acute inflammatory process which has led to the perforation prevents safe suturing of the stump in the case of a Billroth II operation and is not helpful in obtaining primary healing in the case of a Billroth I procedure. Furthermore, in a five-year follow-up of patients with perforated ulcers at the Royal Melbourne Hospital there are a number who have had no further symptoms after simple closure, and in these cases an immediate gastrectomy would have been needless.

The patients who would benefit from an immediate gastrectomy are those with perforated gastric ulcers which are easily accessible in the antral area, especially if malignant change is suspected.

The authors advocating continuous gastric suction instead of operative closure in this emergency have not been convincing (Hermon Taylor, 1946). When good facilities are available I vigorously condemn this practice of conservative management and advocate immediate operative closure. However, this conservative treatment is indicated on the rare occasions when the patient is unfortunately located in a place where operation cannot be carried out.

Summary.

1. Impressions after 250 gastrectomy operations for innocent peptic ulceration are recorded. The pathological findings in the resected specimens are described.

2. Some aids in the diagnosis of peptic ulceration are discussed.

3. A classification of peptic ulcers into four groups is given to assist in deciding whether conservative or operative treatment is indicated. Group I consists of patients with acute and subacute ulcers which do not require operation. Group II consists of patients with chronic ulcers which are tolerable with conservative treatment and do not require operation. Group III consists of patients with chronic ulcers which are intolerable with conservative treatment and are relieved by operation. Group IV consists of patients with severely complicated ulcers which require operation without question.

4. Conservative treatment is discussed in the light of recent improvements in dietary, medication and bed rest.

5. Operative treatment is discussed, and while it is admitted that the Billroth II operation is still the most popular method, a plea is made to carry out Billroth I operations when possible.

6. The management of severe hæmatemesis is described, and a plea is made for early consultation between physician and surgeon and for continued vigilance.

7. The importance of immediate operative treatment of perforated ulcer is emphasized. Simple oversewing of the ulcer is favoured in most instances.

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CARCINOMA OF THE STOMACH: A CRITICAL REVIEW.

By JOHN SMYTH,
Newcastle.

FOR a somewhat longer period than fifty years a carcinoma has been regarded as a tumour which begins in a certain situation in the body, and after a period of local growth metastasizes to the neighbouring lymph glands and other more distant parts of the body, finally producing death. This lethal metastasizing property has been known as malignancy. Because of this concept it has been logically concluded that if malignant disease can be diagnosed whilst it is still localized, excision will bring about a cure. In order to determine whether a lesion is malignant whilst still of localized nature, resort is had to microscopic examination. The deduction is constantly made that a certain microscopic appearance portends a certain subsequent natural history. As the only true indication of malignancy is spread to a distant part and ultimately death of the patient from the tumour, acceptance of microscopic appearance as proof that a tumour will follow a certain natural course is always open to question, and occasionally is very wide of the mark. A tumour which quickly kills the patient may have a histological appearance exactly similar to one which takes twenty years to kill. The macroscopic and microscopic appearances determine that a tumour belongs to the genus carcinoma. Deductions from these appearances as to the malignancy of the carcinoma are deductions, not facts. Subsequent observation of the tumour in the patient is the only way of determining the degree of malignancy. The logical sequences of this philosophical attitude to carcinoma have been as follows: (i) that it should be diagnosed as soon as possible after the onset of symptoms; or (ii) that it should be diagnosed before the onset of symptoms or signs if cytological, radiological or other methods make this possible; (iii) that treatment after diagnosis is urgent; (iv) that surgical treatment should consist if possible of total excision; (v) that failure to effect a cure should be attacked by more vigorous, wider and more radical surgery, if surgery is the treatment of choice; (vi) that exploration should be carried out in all cases, in the hope that cure may be possible.

Length of Life.

In the case of carcinoma of the stomach, it is often assumed that the period between onset and death is three to six months. Review of some published data quickly dispels this notion. The British Empire Cancer Campaign Committee was able to survey 1405 cases of carcinoma of the stomach, emanating from all voluntary and London County Council hospitals in the County of London. This review showed that the interval between the first symptom and the patient's consulting a doctor was as shown in Table I. It will be seen that the existence of a total of at least 1·3% of all gastric carcinomata had been known to the patient for a period of two years before he reported to a doctor. Indeed Guiss, in a still larger series, found that some 10% of patients had symptoms for two years before reporting to a doctor, and Payne reported that 20% of 506 patients had a history exceeding two years. In the series reported by Swynnerton and Truelove, 18% of 375 patients had had symptoms for more than two years before being admitted to hospital.

In 1936 Professor Willy Anschutz, of Kiel, produced some interesting figures. In a series of 1000 cases of carcinoma of the stomach he found that operability was related to length of history, as in Table II. He described this as "almost paradoxical". This depends upon one's philosophy. If the mental approach is that the extent of a carcinoma is related to time, it is not "almost paradoxical", it is paradoxical. If, however, the extent of carcinoma is considered as related much more directly to its degree of malignancy than to its duration, this result is logical and expected.

The most surprising observations on cancer of the stomach are those emanating from Swynnerton and Truelove, of Oxford, in 1952. In their 375 cases it was noticed that the three years' survival figures in cases in which resection had been performed were as in Table III. Their comment was as follows:

> Among the resected group, the outstanding factor influencing prognosis was the length of history. Somewhat unexpectedly, the prognosis was found to improve with increasing length of history. The age distribution of the patients, the site of the lesion and the possibility of ulcer cancer do not explain this finding, and we conclude that it is due to the occurrence of slow-growing carcinomata.

TABLE I.

British Empire Cancer Campaign Committee Survey: Time from Onset of Symptoms to Patient's Consulting a Doctor.[1]

Period.	Percentage of Cases.
Under twelve months	73·1
Unknown	22·0
Twelve to twenty-four months	2·5
Over two years	0·8
Over four years	0·5

[1] Average age of onset of symptoms, sixty years.

However, there was no correlation between histological grade of malignancy and length of history.

These data show that the rate of growth of carcinoma of the stomach is very variable. Sometimes carcinomata are very slow to kill, though presenting the same histological appearance as the more quickly growing and more quickly lethal ones. The more quickly lethal ones are, of course, in the majority.

TABLE II.

Anschutz's Series.

Length of History. (Months.)	Percentage of Patients with Operable Disease.
Three	27
Six	29
Twelve	28
More than twelve	30

Treatment.

When we turn from length of life to treatment, some caution is necessary in considering the results achieved by certain clinics or individuals who have specialized in the treatment of carcinoma of the stomach and who have a national or international reputation. The journey from San Francisco to Boston and the treatment in Boston require a moderate outlay of money. The doctor at home has already "screened" these patients, and those with the less favourable prognosis may easily have been dissuaded from going. Rather than review such selected series, it may well be that a truer picture will be obtained from unselected surveys such as that of L. W. Guiss, who reviewed a total of 2891 cases of cancer of the stomach in Los Angeles County between 1930 and 1949. These large series give a very much truer indication of the futility of attempting to cure most cancers of the stomach, if not all of them. In order to reduce his series to figures which are easy to grasp, a basis of 1000 cases can be taken, as in Table IV. Guiss discovered the surprising anomaly that 200 per 1000 of these patients with cancer of the stomach are never admitted to any hospital, as the notifications for death due to cancer of the stomach exceed the hospital admission figures by about this margin. Guiss also noticed that patients treated by palliative non-resection lived an average of 5·8 months after operation, and that those submitted to palliative resection averaged fifteen months after operation. The patients with inoperable disease lived for an average of six and a quarter months from diagnosis. Amongst his patients treated by curative partial gastrectomy, approximately one-third had a long-term survival averaging nine years, and two-thirds had a shorter-term survival averaging about two years. Eleven patients were cured per 1000 admitted to hospital; this gives a cure rate of approximately 1%. There were no cures or long-term survivors after total gastrectomy.

TABLE III.

Swynnerton and Truelove's Series (Oxford, 1952); Three-Year Survival Figures.[1]

Length of History.	Number of Patients.	Number Alive.	Percentage of Three-Year Survivors.
Less than six months	26	2	7·7
Six months to two years	22	8	36·4
Over two years	24	13	54·2

$\chi^2 = 12{\cdot}683$, $n = 2$, $P < 0{\cdot}01$.

The British Empire Cancer Campaign Committee's figures for operations in the County of London are also of interest, and may be seen in Table V. An interesting figure produced by this Cancer Campaign Committee was that 729 patients with inoperable growths survived for an average of nine months from onset. This compares with Guiss's figure of six and a quarter months from diagnosis to time of death. It is suggested that the common approach to this disease is that the duration of life in inoperable cases is not as great as this. It is, of course, grossly unfair to state that if these patients had had an operation they might have survived longer. These are the patients with growths of such great malignancy that even the most optimistic surgeon would not hope to be able to improve their condition. These are the worst cases of the series, not the latest. They are those with the most highly malignant growths, not those who have had their carcinoma the longest.

TABLE IV.

Guiss's Series—Los Angeles County, 1930 to 1949, 2891 Cases: Findings per 1000 Cases.

Observation.	Number.
Patients never admitted to hospital	200
Condition declared inoperable on patient's admission to hospital	480
Patients undergoing exploratory laparotomy only (discharged, 55; died, 55)	110
Patients undergoing palliative operations, of which one-third were resections (discharged, 46; died, 84)	130
Patients undergoing curative resections (discharged, 56; died, 24)	80
Total	1000

TABLE V.

British Empire Cancer Campaign, County of London: Total, 1405 Cases.

Type of Operation.	Number of Cases.	Deaths.
Curative operations	243	80 (33%)
Total gastrectomies	20	18 (90%)
Partial gastrectomies	223	62 (28%)
Palliative operations (partial gastrectomies, 21, deaths, 12—57%; other operations, 172, deaths 56—33%	193	68 (35%)
Laparotomy only	240	55 (23%)

In speculation regarding what constitutes curative surgery, confusion abounds. There are few surveys of the

real end-results of surgery; but an interesting review of the results of 92 partial gastrectomies performed in 11 leading New York hospitals was made by McNeer *et alii* in 1951. Cases were accepted for this review only on the following conditions: (i) if the patients had had a partial gastrectomy the intent of which was cure, not palliation; (ii) if they had subsequently died; (iii) if they had had a post-mortem examination. Of 92 such patients, in 88 carcinoma was still present in the body at the post-mortem examination; in four, no carcinoma was found. However, the statement is made that on further investigation "unsuspected foci of carcinoma were found in the splenic pedicle and tail of the pancreas in fifty per cent of cases". Therefore, the four cases in which no carcinoma was originally found must be suspect. McNeer *et alii* concluded that partial gastrectomy fails to cure carcinoma of the stomach and that "total gastrectomy is the treatment of choice".

In a review of 279 cases of his own encountered between the years 1940 and 1951, Garlock stated that he had performed 24 total gastrectomies with four deaths (16·7%). After these total gastrectomies there were no long-term survivors. His partial gastrectomy survivors were as shown in Table VI. His conclusion was that "it is natural to become a proponent of subtotal gastrectomy as the treatment of choice for malignant lesions in the distal portion of the stomach".

TABLE VI.

Garlock: Survivors after Partial Gastrectomy.[1]

Period.	Number of Survivors.
Five years	3
Six years	4
Seven years	2
Eight years	3
Nine years	1
Ten years	1
Eleven years	1
Twelve years	1
Thirteen years	1
Total	17

[1] Average duration of life, approximately eight years.

When all these data are reviewed it will be seen that the most cherished beliefs in the treatment of carcinoma are being challenged. First, if the conclusions of Swynnerton and Truelove are correct, and if Anschutz's observation is valid, then there is little virtue in the early diagnosis of carcinoma of the stomach and still less in "urgent" treatment after its discovery. It may well be that a period of observation in order to study the malignancy of the carcinoma might become a necessary part of the "work-up" prior to operation. These conclusions strike at the very roots of present cancer therapy and have even proved unpalatable to those who have discovered them, as perusal of their papers will show.

Secondly, it will be seen that although the New York post-mortem survey showed that partial gastrectomy does not cure carcinoma of the stomach, it has been adopted as the treatment of choice by one of the world's leading exponents of total gastrectomy. This proponent has therefore reverted to palliative surgery. The relinquishing of total gastrectomy as the treatment of choice for carcinoma of the stomach is also occurring elsewhere. Re Mine and Priestley, dealing with the Mayo Clinic's experience with total gastrectomy over the years, make the following statement:

> In the meantime, we think the evidence is inadequate to justify total gastrectomy in all cases of gastric carcinoma. For example, would you, the reader, like to have total gastrectomy performed if you had a small prepyloric carcinoma?

The greatest champion of total gastrectomy was the late F. H. Lahey. It is interesting to note that the Lahey Clinic has recently made the following statement (Marshall, 1953):

> From data at hand, it can be concluded that total gastrectomy does not increase the five-year survival rate. . . . The employment of total gastrectomy as a routine method of treatment in cases of cancer of the stomach is not advocated, nor have sufficient data been collected to justify the use of such a radical procedure.

A similar abandonment of total gastrectomy has been recorded from Scandinavia.

Taken together, these findings suggest that there is little virtue in the early treatment of carcinoma of the stomach and that there is no curative virtue in either partial gastrectomy or total gastrectomy, which latter failed to effect a cure in both Garlock's and Guiss's series. This means that there is little virtue in any attempt to cure carcinoma of the stomach. Carcinoma of the stomach is either incurable (in the sense that it is too malignant for cure—as is generally the case) or occasionally does not need very extensive operations for its successful eradication, permanently (cure) or for long periods (successful palliation).

It is still often assumed that the finding of inoperable growths by laparotomy is a necessary and harmless procedure. This is definitely not so. The mortality rate for needless and useless laparotomy in this condition is quoted in many sources as approximately 23% to 27%, as in the survey of the British Empire Cancer Campaign. In Guiss's series it was 50%. In the Royal Newcastle Hospital, from 1938 to 1952, the operation had a gradually decreasing mortality, but averaged 30%. In 1953-1954 it was still 17%. It is often stated that these people are better dead, as they would only live to suffer; but this has not been put to numerical test and would be worthy of further investigation.

With regard to the negative balance brought into large series by needless and harmful operations, an instrument which has been much neglected is worthy of further consideration. It is the peritoneoscope (Ruddock, 1937). This instrument is often successful in making a diagnosis in cases in which peritoneal and hepatic metastases are present. During the last two years 11 peritoneoscopies for this condition have been performed in the Royal Newcastle Hospital without a single death. Examination is performed under local anæsthesia and causes no distress, even to the most seriously ill patients. Though this instrument has been used for many other purposes, this is probably its greatest use. If it merely prevents operation on the dying, it can be a most useful and in fact life-saving instrument, even if the suffering prevented by its use is not considered.

To turn to the question of palliative treatment of carcinoma of the stomach, the operations available are partial gastrectomy and palliative non-resection operations, the chief of which is gastro-enterostomy. Experience in many places has shown that gastro-enterostomy is often very unsatisfactory for the vomiting caused by carcinoma of the stomach and alleged to be due to pyloric stenosis. Infiltration of the stomach wall causes loss of propulsive effect, which is just as serious in regard to vomiting as obstruction of the lower end. Gastro-enterostomy thus often fails to relieve the vomiting, and the patient dies just as quickly as if no operation had been performed, or more quickly. Palliative non-resection operations carry a high morbidity and mortality and generally give poor palliation. Unnecessary laparotomies and "tinkering" palliative operations are therefore not to be dismissed lightly; they should be deplored. On the other hand, in the less common case of malignancy of low order, partial gastrectomy often gives very successful and very satisfying palliation. There are few surgeons who cannot muster a list of patients who have had palliative partial gastrectomy, who have lived three, four, five, six or more years after operation, and who after operation have eaten well, have gained three to four stone in weight and have certainly had their life-span extended and their happiness increased by this operation.

An Appraisal of Treatment.

A most surprising way of appraising the value of treatment of carcinoma of the stomach has been adopted—all the least favourable cases have been automatically excluded

from all surveys dealing with the value of treatment. If this method was adopted in the evaluation of a new drug for the treatment of typhoid fever, astonishment would be expressed that such a naïve trial could be attempted. All those patients who were most seriously ill with typhoid would be automatically excluded from the trial, and the 10% to 20% of those with the most favourable outlook would be treated with the new drug. Should some 4% to 5% of these recover, it would be strange to hear the drug hailed as a successful cure for the disease. These figures, however, are not very far from those which have been hailed as a great success in the surgery of carcinoma of the stomach. The fact that most series show striking similarity of five-year "cure" rates suggests at once that neither the method of treatment nor the skill of the surgeon is responsible for these cures, but that they are due to carcinomata whose rate of growth is slow. It is even conceivable that in some series therapy has resulted in overall poorer results than as if no therapy had been undertaken at all. It is most unfashionable in this disease to attempt balance sheets of whole series. An attempt will be made to show that these balance sheets are possible.

To compute the effect of treatment on the duration of life of those afflicted by carcinoma of the stomach, it is necessary to divide the patients into categories, as follows: (i) those with inoperable disease—no operation; (ii) those with inoperable disease, who have undergone laparotomy and closure only; (iii) those who have undergone laparotomy and palliative procedures, excluding resections; (iv) those who have undergone palliative resections; (v) those who have undergone a resection, the intent of the surgeon being cure, not palliation. It is conceded that this classification is exposed to the whim of the surgeon; but all reviews are in these subjective terms.

It is necessary first to strike an average duration of life for each type. Both the London and the Los Angeles surveys give a duration of life in the inoperable cases of six months (types (i) and (ii) above). In type (iii) (palliative non-resection operations) Guiss's patients had an average duration of life of 5·8 months. This is approximately the same as for those with inoperable disease. Type (iv) patients—those who have a palliative resection—live an average of fifteen months after operation (Guiss).

Type (v) cases are the most important group in this regard. Approximately one-third of survivors after resection in both the London and Los Angeles surveys have long-term survival, and two-thirds have short-term survival.

As the average age of the patients is sixty years (London survey), the maximum expected duration of post-operative life of the long-term survivors is about fifteen years.[1] However, some of these long-term survivors, though alive at five years, subsequently die of cancer (seven out of 40 in Guiss's series). If we allow the maximum theoretical duration to those supposedly free of cancer, the theoretical average duration of life of Guiss's long-term survivors is eleven years. From his actual figures at the time of publication, the average is nine years. Garlock's long-term survivors averaged eight years of post-operative life at the time of his publication on the subject. It would seem that nine years would be a reasonable average for all long-term survivors after curative resection.

The year-by-year total deaths in all 1405 cases of carcinoma of the stomach in the London series were as follows: first year, 1189; second year, 94; third year, 32; fourth year, 17; fifth year, 4; If we assume that the survivors for the longest time in these cases all underwent a curative resection but lived less than five years, the average duration of life of the 103 short-term curative resection survivors is approximately two years—

$$\left(\frac{(4 \times 4{\cdot}5) + (17 \times 3{\cdot}5) + (32 \times 2{\cdot}5) + (50 \times 1{\cdot}5)}{103}\right)$$

This computation, of course, is biased in favour of the procedure. To summarize: the average durations of life in carcinoma of the stomach are as follows: (i) inoperable disease, no operation, six months; (ii) inoperable disease, laparotomy and closure only, six months less some shortening of life produced by the operation in the survivors (25% to 50% perish); (iii) palliative non-resection, six months; (iv) palliative resection, fifteen months; (v) curative resection; one-third of patients nine years, two-thirds of patients two years, average 4·3 years.

Now that we are armed with this information, balance sheets can be constructed and examples are appended (Tables VII and VIII). In the making up of such a balance sheet, patients with inoperable disease may be regarded as neutral, having neither positive nor negative balance. As those who have had palliative non-resection operations live an average of 5·8 months (Guiss) and those with inoperable disease six months, survivors after palliative non-resection operations may also be regarded as neutral to the whole series. Patients who die after simple laparotomy are of course in negative balance. According to the London and Los Angeles surveys, these people would have averaged a life-span of six months. Multiplication of the number of deaths by the months lost gives the amount by which the series is therefore in negative balance due to the deaths from laparotomy. Those patients who have palliative non-resection operations and die immediately are robbed of a duration of life of about six months each, as the average life of these in Guiss's series was 5·8 months after operation. These also must be added to the previous negative balance. Again, those patients who die after resection belong to the most favourable, long-living group with slow-growing tumours, and they must also be added to the negative balance. They lose a duration of life comparable with that of survivors after resection, of whom survivors after palliative resection average fifteen months, one-third of survivors after curative resection nine years, and two-thirds of survivors after resection two years (Garlock, Guiss, and London survey).

On the positive side there is the increase in duration of life of those who survived the palliative resection operations and of those who are apparently cured by the resection. The word "apparently" is used advisedly, because of these survivors after resection a decreasing number are alive each year. These patients, of course, faced a duration of life averaging much longer than six months without therapy, and to attribute all their post-operative duration of life to the operation is being charitable to the procedure. After all, some of them have already lived with their symptoms for four years before consulting a doctor.

TABLE VII.

Balance Sheet of Effect of Treatment on Carcinoma of the Stomach, London Series (British Empire Cancer Campaign Committee): Total, 1405 Cases.[1]

Positive Balance. (Years.)		Neutral (Cases).		Negative Balance. (Years.)	
Curative resection survivors:		Inoperable ..	729	Laparotomy only:	
54×9 ..	486	Recovery after palliative operation (non-resection) (average 5·8 months) ..	116	Dead: $55 \times \frac{1}{2}$	28
109×2 ..	218			Survivors: $185 \times ?$	
Palliative resection survivors:				Palliative operation (non-resection):	
$9 \times \frac{3}{4}$ ..	7			Dead: $58 \times \frac{1}{2}$	29
				Palliative resection:	
				Dead: $10 \times 1\frac{1}{2}$	13
				Curative resection:	
				Dead: 27×9	243
				53×2	106
Total	711	——			419 ($+185 \times ?$)
Excess of positive over negative balance				292 years	
Increase in life per case				$\frac{292}{1405}$ years = 2·3 months	

[1] Ignores those never admitted to hospital—compare Guiss.

[1] This contravenes strict statistical rules. The expected duration of life in each case should, of course, be estimated and the result averaged.

No allowance has been made on the negative side of the balance sheet for those who die as a result of operation, and for whom the diagnosis of carcinoma was incorrect. The London survey actually quotes a figure for incorrect diagnosis. Between 1917 and 1948 at the Mayo Clinic this mistake was made 15 times in 185 cases of total gastrectomy. No less a person than O. T. Clagett performed a successful total gastrectomy on a man, aged ninety-two years, for supposed malignant disease which the pathologist was unable to confirm. There can be no question that patients occasionally die after an operation subsequent to an incorrect diagnosis of malignant disease.

TABLE VIII.

Balance Sheet of Effect of Treatment of Carcinoma of the Stomach, Guiss, 1930 to 1949, Los Angeles: Per 1000 Cases (Actual Number, 2891).

Positive Balance. (Years.)		Neutral (Cases).		Negative Balance. (Years.)	
Curative resection survivors:		Not admitted to hospital ..	200	Exploratory laparotomy:	
19×9 ..	171	Inoperable ..	480	Dead: 55×½	28
37×2 ..	74	Non-resection recoveries (average 5·8 months) ..	31	Survivors: 55×?	
Palliative resection survivors:				Palliative operation (non-resection):	
15×¾ ..	11			Dead: 56×½ ..	28
				Palliative resection:	
				Dead: 28×1¼..	35
				Curative resection:	
				Dead: 8×9 ..	72
				16×2 ..	32
Total ..	256	——			195 (+55×?)
Excess of positive over negative balance ..				61 years	
Increase in life per case				$\frac{61}{1000}$ years = 2 weeks 6 days	

It will be seen that in the London and Los Angeles surveys the increased expectation of life produced by treatment over the whole series does not exceed more than a statistically insignificant month or two per case, despite this bias in favour of "treatment".

Conclusions.

1. In assessing the results of our efforts to deal with carcinoma of the stomach, a crucial factor has been ignored. It is the degree of malignancy of each tumour. This lack of attention to a vital factor makes nearly all recorded results valueless.

2. The stage has been reached at which carcinoma should be classified by type, the basis being the natural history of growing, metastasizing and lethal powers—not microscopic appearance. Classification by "stage"—the basis being an assumed duration of growth and an assumed extent of spread—is now outdated and should be dropped.

3. It is open to question whether there is value in the early diagnosis of carcinoma of the stomach.

4. It is doubtful whether there is any urgency in the treatment of discovered carcinoma of the stomach. Indeed, some delay in treatment may be needed in order to allow assessment of the intrinsic malignancy of the condition. There is no other method of doing this.

5. Alleged "cures" of carcinoma of the stomach are occurring in occasional cases in which the growth is of low intrinsic malignancy. In these cases only localized resections are required for total excision or for prolonged palliation.

6. The tendency to extend operations to effect "cure" should be resisted, as this leads to mortality rates which may throw complete series into negative balance. This defeats the aim of medicine.

7. The peritoneoscope is due for a resurrection. It can avoid the painful killing of the hopelessly ill and can help to keep total series of cases in positive balance.

8. The basis of the indications for operation in gastric carcinoma should be shifted from emphasis on attempted cure to accent on the relief of symptoms. Those patients whose symptoms require relief may justifiably be subjected to operative procedures. As the intent of this operative procedure is limited, the operative procedure itself should be correspondingly limited to what the patient in his weakened condition may safely stand. Much thought should be allotted to the patient who is known to have a carcinoma of the stomach before he is assaulted. There is much evidence that "tinkering" operations such as needless laparotomy and palliative non-resection often worsen his suffering and shorten his life.

9. The only really worthwhile palliation for carcinoma of the stomach is partial gastrectomy. Few cases are suitable for this procedure, and much care and thought should be expended in the selection of the few suitable cases.

10. As with other diseases, an operative death should be a reproach not lightly disregarded.

11. Despite the difficulty, surgeons should attempt balance sheets of the effect of therapy on the duration of life in carcinoma.

12. The purpose of this review is not to decry treatment of gastric carcinoma. It is a plea for constant rational review of results in an attempt to give the best treatment. This is not necessarily synonymous with the most drastic treatment.

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Reviews.

A Synopsis of Medicine, by Henry Letheby Tidy, K.B.E., M.A., M.D., B.Ch. (Oxon.), F.R.C.P. (London); Tenth Edition; 1954. Bristol: John Wright and Sons, Limited. 7½" × 5", pp. 1272. Price: 35s.

To cope with the ever-increasing scope of medicine, Sir Henry Letheby Tidy's well known "Synopsis of Medicine" has now rather the appearance of a weighty tome, despite the fact that the preface states that this, the tenth edition, has been enlarged by only four pages to a total of 1,253 pages, inclusive of the index. The time may soon come when such synopses will need to be further summarized or else like Holy Writ divided in twain, or made into three parts like Gaul.

The author states that this synopsis is not meant to take the place of a text-book, and if students bear this fact in mind they can use the work to greatest advantage. Its tabular form allows a quick revision of all salient features, but no words are spent to expand the points enumerated.

All sections have been extensively revised and in some parts chapters have been rewritten to fit in with the latest advances. For the first time diseases of the liver, gall-bladder, pancreas and peritoneum have been made a separate section. Topics not previously covered include fibrocystic disease of the pancreas and "post-gastrectomy syndrome".

There are some minor deficiencies, but no text-book of medicine could please all critics. However, it is perhaps surprising that in the treatment of tuberculosis, iso-nicotinic acid is not mentioned, nor is pulmonectomy. Lobectomy is mentioned, but not partial removal of a lobe.

The chapters on diseases of the blood have been completely revised and the author expresses the hope that soon advances into white-cell disease will parallel those made in the therapy of erythrocytic disease since the discovery of "liver treatment".

This work will still prove most popular with all medical students preparing for their finals, as well as for busy practitioners who may be confronted with an unusual case and need a quick guide for diagnosis or therapy. It will also be a useful aid to tutors, giving them a sound basis for their lectures.

Gesundheit durch Krankheit: Das Rätsel der Immunität. By Hans Joachim Flechtner, 1954. Dusseldorf: Econ-Verlag GMBH. 8½" × 5½", pp. 352, with 30 illustrations. Price: DM 14,80.

THIS book, "Health Through Disease, The Problem of Immunity", aims very high indeed. Through it the author intends to bring within the grasp of the educated layman one of the most fascinating and most important chapters of modern medicine.

The author has skilfully avoided the pitfalls that beset the modern popular magazine storyteller as well as the high and mighty scientist who talks down to his readers; he has avoided over-simplification and facile similes; he has, probably helped by his experience in writing books of a similar nature before, succeeded in presenting his case in a clear, concise and intelligible manner, always keeping the limits of our present-day knowledge well in sight.

The book covers a very wide field indeed. After an introduction which is devoted to definitions and historical aspects, the book turns to a discussion of the infective agents. Protozoa, bacteria and viruses are described and their possible modes of action explained. The protective forces of the organism are next discussed, and an assessment of the interaction of these two forces follows. The next chapters deal with antigens and antibodies. Their nature and their formation, their interaction and the results of this interaction are discussed in quite remarkable detail. The last chapters describe chemotherapy, and passive and active immunization.

Throughout the information is generally accurate and reasonably up to date; the illustrations are good. It is a book that should have a wide appeal if it were written in English. Although its German is remarkably free and easy, devoid of the heavy constructions and the ponderous sentences that are often found in scientific treatises, it might unfortunately prove too difficult for the average reader who has to rely on the German he learnt in school.

Reflections on Renal Function, by James R. Robinson, M.D., Ph.D. (Cantab.); 1954. Oxford: Blackwell Scientific Publications. 9" × 5½", pp. 164, with three text figures. Price: 17s. 6d.

FOR several years Dr. J. R. Robinson has given a course of lectures to advanced students at Cambridge on the physiology of the kidney. He has now expanded the notes prepared for these lectures into a small book entitled "Reflections on Renal Function". In 150 pages an extraordinary amount of ground is covered in a very interesting and instructive manner. The book is intended to bridge the gap between the rather meagre detail given in text-books of physiology and the large treatises on the kidney. This it does admirably. The treatment is of necessity somewhat didactic, but opposing views—and these are not few—are presented adequately and fairly. The chapter headings will indicate the scope of the book: "Glomerular Filtration and Tubular Reabsorption"; "Tubular Secretion"; "The Excretion of Water and Sodium"; "Renal Control of Acid-Base Balance"; "The Regulation of Renal Function"; "The Regulation of the Volume of the Body Fluids". Finally there is a short chapter on unanswered questions. Normal conditions only are discussed, except where a short reference to abnormal conditions helps the explanation. The author stresses the importance of the kidney as a gland of internal secretion, secreting into the blood from the tubular fluid filtered through the glomeruli, the physiological extracellular fluid. The removal of waste products of the body and foreign substances is only one aspect of this function. Tubular secretion into the tubules is shown to be of little importance in the over-all process, except in the excretion of ammonia and hydrogen ions. As tubular secretion has become of importance in assessing the functional activity in disease, it is treated adequately. The book can be recommended to anyone wishing a clear and readable account of the present knowledge of renal function.

Textbook of the Rheumatic Diseases, edited by W. S. C. Copeman, O.B.E., M.D., F.R.C.P.; Second Edition; 1955. Edinburgh and London: E. and S. Livingstone, Limited. 9½" × 7", pp. 762, with 464 illustrations, a few in colour. Price: 52s. 6d.

A second edition which is not larger than its predecessor must be rare, and this book is no exception. Over 100 pages have been added and the list of contributors increased to 26. Much of this additional material is of course concerned with the application of cortisone, hydrocortisone and ACTH in the treatment of the various rheumatic diseases. Practically all the eminent names in this field in Great Britain are to be found among the contributors. Each chapter is therefore a short monograph or essay on a particular topic by individual writers. This has resulted in an appreciable amount of overlapping or repetition, but in his preface Copeman states that this has been deliberately accepted in order to ensure completeness in each section.

The book opens with a number of introductory chapters on basic topics such as the mechanism of pain, the anatomy and physiology of joints, the effect of environmental factors in rheumatic disease, and a good discussion of the action and uses of the adrenal hormones in rheumatology. The various rheumatic disorders are then considered, each writer presenting a complete survey of the clinical features, diagnosis and treatment of the particular condition under discussion. These chapters are comprehensive and in general represent orthodox British views at the present time. Sections on the special and clinical pathology of the rheumatic diseases follow; there is a well illustrated chapter on radiological changes; physical methods of treatment, including orthopædic surgery, are discussed; and finally there are some short articles on psychiatric, social and industrial aspects of these diseases.

The main value of this book is probably that it brings together in one place a wealth of information on the many and varied problems which arise in the rheumatic diseases. It is not a book purely for the specialist; in fact it would probably be of more value to the general physician or practitioner for reference and guidance in the diagnosis and management of the rheumatic diseases.

The Skin: A Clinicopathologic Treatise, by Arthur C. Allen, M.D.; 1954. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical) Limited. 11½" × 9", pp. 1064, with 495 illustrations. Price: £13 2s. 6d.

PATHOLOGISTS should welcome this book. It is written by a general pathologist of wide experience in many fields apart from dermatology, who therefore sees the dermatological manifestations of internal disorders in their proper perspective.

The grouping of the various diseases is according to their histological resemblances. The description of the various entities covers their clinical appearances and therapy is broadly outlined. Numerous photographs illustrate the clinical as well as the microscopic appearances. In addition, the differential diagnosis is accompanied by photomicrographs illustrating the differential characteristics. The bibliography is extensive and listed under headings at the end of each chapter.

Some controversial subjects, such as the genesis of melanocytes, are discussed at length, and even when the views of the author differ from those held generally, there is solid backing for his opinion.

Although this book is the most comprehensive yet published, there are some discrepancies, as perhaps may be expected in new works of this type. The entity known as keratoacanthoma is not mentioned by any of its numerous synonyms. Although there are frequent warnings in this book that pseudoepitheliomatous hyperplasia may be mistaken for carcinoma, plate 365 purporting to represent a squamous cell carcinoma has all the hallmarks of a keratoacanthoma. Furthermore, the legend to this plate carries the warning that this must not be mistaken for pseudoepitheliomatous hyperplasia.

Some fairly common disorders are dealt with in a sketchy fashion, though usually well illustrated. If one looks up pyogenic granuloma, the index refers to the illustrations only. In the text it receives a brief mention under the heading of capillary hæmangioma.

The faults are of minor degree in comparison to the enormous help the book will give to general pathologists who have hitherto been intimidated by the multiplicity of synonyms for dermatological conditions. Clinicians, too, who inspect their patients with an histological eye should find it most helpful. There is a rational outlook in classifying conditions which are often regarded as distinct entities because of minor clinical variations.

This massive book is strongly and handsomely bound and printed on art paper throughout. There are 495 full-page plates which with only occasional exceptions are of very high standard. The price, though very high, should not deter those who seek some order and logic in dermatopathology.

Cerebrovascular Disease, by James Peter Murphy, M.D., with a foreword by Percival Bailey, M.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 9″ × 6″, pp. 408, with 128 illustrations. Price: $12.00.

CEREBRO-VASCULAR accidents have always been a cause for great alarm to the patient and the relatives, and a source of interest, mainly academic, to the medical practitioner. They have usually been designated as "strokes" and been given a doubtful prognosis; and treatment has usually been expectant. Now, with the advent and widening application of newer diagnostic methods, especially by the various forms of angiography, and with the success attained by skilled neurosurgical techniques, the whole outlook has changed and thus Murphy's treatise on the modern diagnosis and management of the numerous varieties of cerebro-vascular disease is very timely.

The author is primarily a neurosurgeon, but he has obviously had an extensive basic training and has produced a most comprehensive volume of 21 chapters.

The first four chapters are concerned with the embryology, anatomy and nerve supply of the blood vessels of the brain and the large venous sinuses. They are well illustrated and supply some fascinating answers to many of the problems encountered later in the consideration of the various pathological states, especially in relation to the vessels of the circle of Willis. The areas of brain supplied by branches of the main arteries are well delineated.

The next chapter on the physiology of the intracranial circulation is one of the longest and best in the book. It is concerned mainly with the recent work on hæmodynamics of the cerebral blood flow and the intravascular pressures, with special reference to the effects of carotid ligations on them. Vascular resistance and conditions influencing it also receive full consideration, especially the influence of the stellate ganglion and nor-epinephrine and other drugs.

In future editions, more space could be given to electroencephalography and its place in the understanding of the workings of the brain.

The chapter on the examination and differential diagnosis of the acute vascular accident contains references to all the various points to be looked for in making an ordinary clinical examination; but the table of differential diagnosis, inserted at page 112, has rather too much detail in it. It should be simplified and inserted in its proper place at page 121.

The main body of the book is formed by the next ten chapters, in which cerebral vasospasm, thrombosis, embolism and hæmorrhage, subarachnoid hæmorrhage, vascular malformations, cerebral arteriosclerosis, hypertensive vascular disease and inflammatory diseases are all considered under the headings of ætiology, pathogenesis, pathology, symptoms and signs, laboratory studies, diagnosis, treatment and prognosis. Such didactic handling is interesting, but leads to much repetition and redundancy, and the matter could well be pruned.

The chapter on subarachnoid hæmorrhage is really one of the best and affords the most interest for the physician, neurologist and neurosurgeon. It sums up the present position of the treatment of intracranial aneurysms quite well. The author favours the conservative attitude and advocates carotid ligation, with precautions, rather than the direct attack adopted by other neurosurgeons, chiefly on the ground of a 25% mortality rate in some of the earlier series. But this figure has been improved considerably since that time by other neurosurgeons and an open mind should still be kept.

On the other hand, the author is a strong advocate for surgery in subacute and chronic cases of intracerebral hæmorrhage.

The next two chapters deal with such varied subjects as inflammatory and collagenous diseases, blood dyscrasias, vitamin deficiencies and poisons. Headache receives a chapter for itself.

The general and nursing management of the patient is extremely well dealt with. The advice given is sound and should be followed meticulously and carefully by anyone who has to undertake treatment in these cases. The importance of controlling the biochemistry of the blood electrolytes is advisedly stressed.

Finally, the various diagnostic and therapeutic techniques such as pneumoencephalography, ventriculography, angiography, electroencephalography, stellate blocks and cranial operations are briefly but adequately described.

In a work of this magnitude, it is inevitable that some differences of opinion or mistakes will occur. On the top of page 22, if the cavernous sinus receives blood from the eye only during intrauterine life, why does so much chemosis and exophthalmos occur (see page 99) when this sinus is thrombosed? Also the value of intraarterial transfusions over ordinary intravenous transfusions for shock is still a very debatable point; and many neurosurgeons would not like to give either intravenous or intramuscular injections of magnesium sulphate as dehydrants in hypertensive encephalopathy.

The use of relatively unknown personal names attached to the various syndromes of brain stem thromboses seems only to complicate matters.

On page 26 the reader is referred to Figure 127 for a view of the *descendens hypoglossi* nerve, but none can be seen in this diagram; and on page 338 surely the dose of histamine given in an intravenous infusion of 500 cubic centimetres should be 2·75 milligrammes and not 0·275 milligramme?

The book is well set out with clear type on good quality paper and the illustrations are excellently produced. Each chapter concludes with a complete bibliography, mostly of American authors. The book should certainly be read by all practitioners, so that they may bring themselves up to date in the diagnosis and treatment of this type of condition, for which so much can now be done.

Surgical Treatment of Cancer of the Cervix, edited by Joe V. Meigs, M.D.; 1954. New York: Grune and Stratton. 10″ × 7″, pp. 474, with 150 illustrations, one in colour. Price: $12.00.

Joe V. Meigs has brought together the contributions of several noted authorities and edited their contributions in this book, which is clearly printed and well illustrated and is invaluable for the practising gynæcologist. It is not a book for the general practitioner or the occasional pelvic operator.

In the foreword Meigs gives his own opinion that cancer of the cervix should be treated by either irradiation or radical surgery, and it is the duty of the surgeon to choose the best method for each individual patient. The two methods should not be rivals, but partners, in the attack on this disease. He does not favour the combined attack of radiation followed by surgery, but if the cancer is irradiated and is resistant to irradiation, then surgery should follow. If the cancer is radiosensitive, then the only surgery that might follow is the possible extirpation of lymph glands. The question that lymphadenectomy may remove a barrier to later metastases is not yet settled.

Anatomy of the pelvis is well described, the emphasis being on surgical rather than classical anatomy. Of special interest is the section dealing with the blood vessels, normal and abnormal.

Meigs himself has contributed the best article on radical hysterectomy. His method is more radical than the usual Wertheim operation, but he is troubled by post-operative atony of the bladder and rectum, probably because he dissects the pararectal and paravesical spaces extensively, so damaging the parasympathetic and sympathetic nerve supply to the viscera.

Wertheim's original hysterectomy is described by one of his pupils—Paul Werner.

The radical vaginal hysterectomy, with or without lymphadenectomy, is described by contributors who advocate its use in Stage I and poor risk Stage II patients. To us its only possible use for the vaginal operation would be when the abdominal approach is for some reason impossible and the cancer is resistant to irradiation.

XUM

The technique of combined irradiation and transperitoneal or extraperitoneal lymphadenectomy deserves further trial. The results described are not very good if the nodes are affected, but there are as yet few reported cases followed for five years. It seems that the thoroughness with which the nodes are removed is all-important.

Total and partial exenteration are described by various experts with varying lucidity and thoroughness. We shall not comment on these operations, beyond saying that they should be performed only by a special unit under ideal conditions after thorough evaluation of all risks. If we consider the advances in pelvic surgery over the last twenty-five years, we must expect that some modification of this operation will be the accepted procedure for cancer in another twenty-five years.

The treatment of recurrent cervical cancer is, at the moment, very poor, and the described method of fulguration, with its almost inevitable fistulæ, does not seem to be a great advance.

The concluding chapter by Colby concerns the bladder and ureter in pelvic surgery. The injuries to, and operations on, these organs are dealt with adequately.

In addition to the contributions mentioned, articles are included by Henricksen, Te Linde, Carter, Nathanson, Brunschwig, Bricker, Graham and others.

Multiple Sclerosis, by Douglas McAlpine, M.D., F.R.C.P., Nigel D. Compston, M.A., M.D. (Cantab.), M.R.C.P., and Charles E. Lumsden, M.D. (Aberd.); 1955. Edinburgh and London: E. and S. Livingstone, Limited. 9½" × 6½", pp. 312, with 32 illustrations. Price: 35s.

THIS is the most comprehensive book on the subject of multiple sclerosis published for many years. Ætiology is the main theme as attacked from the aspects of early symptomatology, pathology, experimental research and geographical distribution of the disease. The two chapters on early symptomatology should be illuminating to those who are not conversant with the manifold presenting symptoms, hemiplegia, facial palsy, muscular atrophy and trigeminal neuralgia being rarer examples. McAlpine's clinical observations on the local spread of the disease is an interesting correlation of clinical symptomatology and the mode of spread of plaques as seen pathologically in the spinal cord.

Differential diagnosis is gone into at some length, cervical spondylosis claiming an increased attention.

The pathological aspects of the disease are well reviewed by Charles E. Lumsden. The relationship of plaques to the vascular system, especially in the earliest lesions, the question of vascular spasm and thrombosis, perivascular infiltrates and the mode of spread of plaques are all discussed. Lumsden's work on the role of the oligodendroglia in relationship to myelin metabolism and myelinoclasis in other demyelinizing diseases such as the leucodystrophies and allergic encephalitides is set out in one of the most interesting chapters. He concludes from his pathological studies that Schilder's encephalitis, Balo's sclerosis and *neuromyelitis optica* are only variants of multiple sclerosis.

Treatment of the patient as well as his disease is emphasized by the author's stressing the importance of a positive and not a nihilistic attitude. Such problems as marriage, pregnancy, rehabilitation and the social aspects of the disease are discussed. It is interesting to notice the increased attention being paid to emotional factors in both the ætiology and treatment of multiple sclerosis—the emphasis on rest and the avoidance of fatigue and emotional stress.

Altogether this is a fascinating book on the subject. The diagrams and plates are clear and easily understood, with a ready correlation to the text. It is an excellent summary of the present-day knowledge of multiple sclerosis which could be read with interest by all.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Bone: An Introduction to the Physiology of Skeletal Tissue", by Franklin C. McLean, Ph.D., M.D., and Marshall R. Urist, M.D.; 1955. Chicago: The University of Chicago Press. 9" × 6", pp. 194, with 26 illustrations. Price: $6.00.

Produced by the University of Chicago as a unit in "The Scientists' Library: Biology and Medicine".

"Applied X-Rays", by George L. Clark, Ph.D., D.Sc.; Fourth Edition; 1955. New York: McGraw-Hill Book Company, Incorporated. 9" × 6½", pp. 852, with 415 illustrations. Price: $12.50.

The first edition was published in 1927.

"Early Care of Acute Soft Tissue Injuries", by the Committee on Trauma of the American College of Surgeons; 1954. Chicago: American College of Surgeons. 8½" × 5", pp. 206. Price: $1.00.

The committee had the assistance of "many societies and individuals".

"Epilepsy: Grand Mal, Petit Mal, Convulsions", by Letitia Fairfield, C.B.E., M.D., D.P.H.; 1954. London: Gerald Duckworth and Company, Limited. 7½" × 5", pp. 160, with eight illustrations. Price: 8s. 6d.

One of the "Modern Health Series" of books intended for the patient.

"Heart Disease: Including Coronary Thrombosis, Angina, Endocarditis, Tachycardia, Heart Failure, Rheumatic Heart Disease", by Geoffrey Bourne, M.D.; 1954. London: Gerald Duckworth and Company, Limited. 7½" × 5", pp. 136, with four text figures. Price: 8s. 6d.

One of the "Modern Health Series" of books intended for the patient.

"Varicose Veins: Phlebitis, Leg Ulcers, Dropsy, Eczema, Hæmorrhoids", by R. Rowden Foote, M.R.C.S., L.R.C.P. (London), D.Obst.R.C.O.G., F.I.C.S.; 1954. London: Gerald Duckworth and Company, Limited. 7½" × 5", pp. 110, with 16 illustrations. Price: 8s. 6d.

One of the "Modern Health Series" of books intended for the patient.

"Rheumatism: Fibrositis, Arthritis, Lumbago, Sciatica, 'Slipped Disc', Gout, Spondylitis", by W. S. C. Copeman, O.B.E., M.D., F.R.C.P., and R. M. Mason, D.M., M.R.C.P.; 1954. London: Gerald Duckworth and Company, Limited. 7½" × 5", pp. 152, with nine illustrations. Price: 8s. 6d.

One of the "Modern Health Series" of volumes intended for the patient.

"Potassium Metabolism in Health and Disease", by Howard L. Holley, M.D., and Warner W. Carlson, Ph.D.; 1955. New York: Grune and Stratton. 9" × 6", pp. 144, with nine illustrations. Price: $4.50.

A member of the "Modern Medical Monographs" series.

"Le Potassium et la Vie", by Alain Reinberg; 1955. Paris: Presses Universitaires de France. 7" × 5", pp. 128, with ten text figures. Price: 150 francs.

A member of the series "Que Sais-je".

"Bedside Diagnosis", by Charles Seward, M.D., F.R.C.P. (Edinburgh), with a foreword by Henry Cohen, M.D., D.Sc., LL.D., F.R.C.P., F.F.R.; Third Edition; 1955. Edinburgh and London: E. and S. Livingstone, Limited. 7½" × 5", pp. 432, with a few text figures. Price: 18s. 6d.

The first edition appeared in 1949.

"Cardiac Symptoms in the Neuroses", by Doris M. Baker, M.D., F.R.C.P. (London); Second Edition; 1955. London: H. K. Lewis and Company, Limited. 7½" × 5", pp. 58, with seven illustrations. Price: 6s. 6d.

The first edition was published in 1942.

"Tuberculosis: Classification, Pathogenesis and Management", by Milosh Sekulich, M.D., edited by H. Stanley Banks, M.D., F.R.C.P.; 1955. London: William Heinemann (Medical Books), Limited. 9" × 6", pp. 330, with 82 text figures. Price: 50s.

Based on the author's "The Classification of Pulmonary Tuberculosis", reviewed in this journal on September 19, 1953.

"Midwifery: A Textbook for Pupil Midwives", by Aleck Bourne, M.A., M.B., B.Ch. (Cantab.), F.R.C.S., F.R.C.O.G., and Mary Williams, S.R.N., S.C.M., M.T.D.; 1955. London: J. and A. Churchill, Limited. 8½" × 5½", pp. 392, with 112 illustrations. Price: 20s.

The authors of this book have previously published three editions of "Midwifery for Nurses".

The Medical Journal of Australia

SATURDAY, JULY 2, 1955.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words of phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

IDEAS AND THE PRESENT AGE.

> Our civilization will go the same way as those before it if we rely on defending it only by physical strength; but ideas must be defeated by ideas, and a materialistic system by a spiritual civilization which draws its strength from the religion which has given it all that is best and noblest in life.

THESE words are quoted in *The Times Literary Supplement* of February 4, 1955, from a book entitled "World Problems of To-day" by the Most Reverend Cyril Garbett, Archbishop of York and Primate of England. They should be widely disseminated so that as many as possible may heed them. We all know that the world is in a mess—it is psychologically and physically sick. Most of us could give a reasonably accurate account of the symptoms of the illness. In the matter of treatment we shall not all agree and our prognoses will be likely to differ even more widely. However, we shall probably all agree with the Archbishop that reliance on physical strength alone will not be an adequate defence. We shall also agree that ideas must be met by other ideas and that materialism must be countered by a a spiritual civilization. Lack of context does not allow us to determine the full meaning of the last clause. If religion in general is meant rather than that professed by the adherents of a particular denomination, the statement will probably be accepted. It is the wholehearted acceptance of the teachings of religion and the practice of its precepts that lead the individual to think less of himself and more of other people. The point of immediate importance about the Archbishop's statement is that it sums up in a few words the message of Dr. C. G. McDonald's Sir Richard Stawell Oration published in the issue of June 11, 1955. Our orator reminds us that when the multitude is apathetic "a few men of strong ideas can change our destiny overnight". The message is, of course, to all members of the community, but Dr. McDonald addressed himself to the professions and to their influence on our personal life and on our national development, which, he states, is much more complex than it used to be. Professional folk are not inherently different from other members of the community, but they have undergone intensive training and have studied a wide range of subjects. They should therefore have a wider range of vision than non-professional people and a keener sense of values. Dr. McDonald gives as a possible definition of a professional man one who has "the necessary learning and scientific knowledge to provide at a high level for the basic needs of the individual person—religion, justice and health among them". If we take the so-called learned professions named by him—divinity, law and medicine—and those in the expanded field which he mentions, we cannot fail to realize that of them all medicine is the most favoured. It builds on a foundation of science and is concerned with the whole of man's needs, bodily and mental, in a way peculiar to itself. No other profession, including that of the clergy, has so large a field in which to operate, and none therefore has so great a responsibility. We know that "unto whomsoever much is given, of him shall much be required".

Among the definitions of "idea" in the Concise Oxford Dictionary is "conception, plan, of thing to be aimed at, created": The term was employed by Plato to express the real form of the intelligible world, in contrast to the unreal images of the sensible; its meaning was extended by Descartes to denote the objects of our consciousness in general. Locke defined idea as "whatsoever is the object of the understanding when a man thinks". By some, the word idea has been made almost equivalent to what is termed "mental process". The kind of idea under discussion will be the more readily understood if we remember that the word comes from the Greek *ἰδεῖν*, to see. An idea which will bring about a change in man's outlook or action embraces something conceived and perceived, even as though "through a glass darkly". Once an idea, a concept, has been formed it will have no effect if it is, as it were, hidden, folded away in a napkin, as the man in the parable did with his talents. It must be made public, it must be pursued with missionary zeal, with imagination and with unrelenting audacity. And he who does the pursuing must be shed of self-seeking, aiming only at the good result; in other words, his must be a knightly quest. This is not an exaggerated picture, as of one man who will bring salvation. It is a picture that should and could be drawn of all who pursue the one idea.

Those who wish to win adherents to any idea that will make for the healing of the nations will need to understand two questions which will be sure to arise in any proselytizing ventures which they may undertake. The first is the equality or the inequality of man and the second is the freedom of the individual. The innate inequality of man is widely recognized. Typical views in this regard are expresed by J. B. S. Haldane in one of his fascinating essays, and have on a previous occasion been mentioned in these columns. He states that human inequality springs from two sources, nature and nurture. As obvious results of the latter, he points out that it is no use appointing a man a clerk if he has not been taught to write, or a Christian missionary if he has been brought up as a Mohammedan. He goes on to state that men are

not born equal and that no one disputes this in regard to physical characteristics. In the psychological realm, he adds, things are just the same—everyone admits that a certain number of people are congenitally feeble-minded. In the mental and moral spheres the evidence may not be so clear. It would be supposed that identical twins—produced from a single cell—would be equal. Haldane produces evidence (which we need not quote) to show that this is not so. This so-called inherent inequality of man has given rise to the phrase "equality of opportunity" and all that it means. There is no doubt that if every young man or woman had the opportunity of higher education and of choice of a career, there would be less cause for discontent, but there would still be inequality. An entirely different view on human equality is expressed by Jacques Maritain in the opening chapter of his book "Redeeming the Time". He states that when we speak of living things of the same species we refer to the "unity of their specific nature"—in his opinion an appropriate philosophical form of expression. If lions thought, lived in society, and had to obey masters of the same species as themselves, those among them to whom obedience was a burden or who suffered injustices would insist on saying that all lions were "equal in nature". Maritain thinks that the expression "equality in nature" is intended to console us for the wounds we suffer from social irregularities, or to satisfy our resentment against these. He lays aside consideration of such emotional connotations and takes the expression "equality in nature" as purely and simply synonymous with "unity in nature". He formulates three principal positions regarding the problem of the equality or inequality of man. The "fundamental fact" that all men have the same specific nature can be viewed in relation to a system of thought that is nominalist, or idealist, or realist. Taking first the nominalist or empiricist notion of human equality, Maritain holds that the empiricist makes no mistake in thinking that there are, and inevitably must be, individual inequalities between men. His error consists in seeing and stating this only and in practice deeming as nothing the reality and the ontological dignity of that nature or essence which all men have in common. Maritain calls this empiricist notion the anti-Christian philosophy of enslavement, in other words totalitarianism, though he does not use that word. The second attitude which he discusses is the pure idealist notion of human equality, the "philosophy of egalitarianism". For those who think as pure idealists the unity of human nature is the unity of a subsisting idea, of a man-in-himself, existing outside time and of whom all individuals involved in concrete life are merely shadows without substance. In their eyes this realized abstration is reality itself. Maritain sums up this part of the subject as follows:

> The idealist error, as far as the subject with which we are dealing is concerned, does not lie in thinking that there is an essential equality in nature between men. It lies in the conviction that all human substance reflows within the abstract species alone, and that the reality and value of those individual inequalities which are inscribed in the world of what is particular and historic are as nothing. But these individual inequalities, despite the burden of sorrow or injustice which the sins of men or the vices of institutions may superimpose on them, are in themselves as necessary for the development and flowering of human life as is the diversity of parts for the perfection of a flower or a poem.

Maritain insists that the implications of the philosophy of egalitarianism are just as incompatible with Christian thought as the implications of the philosophy of enslavement. He calls it pseudo-Christian egalitarianism. He then proceeds to discuss the third or "realist notion of equality". This he describes shortly as the true philosophy of equality which does not suppress inequalities, but bases them indeed on equality as something more fundamental, and turns them by virtue of justice into an equality concerned with the use and fruition of the common good. He writes that it is an illusion to wish that all may have at the start strictly identical opportunities to mount to the highest degrees in social life. It is, however, proper that the highest social conditions should not of themselves be closed to anyone. Even more important, it is proper that in whatever social structure men are involved, they should have the same opportunities to achieve—each one according to his effort and his condition—their human fullness, those fruits of wisdom and human virtue whose savour is identical, but similarly good in each, whether he spends his life in working the earth, in philosophizing or in governing the State. "Thus, such notions as that of equality of opportunity or equality of conditions, which egalitarianism would make chimerical, become true and proper if they are understood in the sense not of an equality pure and simple, but of a *proportional* equality." Finally Maritain declares that this proportional equality "is a new kind of equality which, by virtue of justice, friendship, and human compassion and by virtue of the communication they provoke, is realized in the fruit". There need be no apology for this somewhat lengthy description of Maritain's views. He is one of the most profound thinkers of the present day, and though his views on equality may be new to many people, they are thought-provoking, and, what is more important, they are logical.

One point only remains for consideration—that of freedom of the individual. The subject has been often discussed in these columns and need not be laboured now. Suffice it to state that as members of a democracy, while we may pride ourselves on our freedom in comparison with the fearsome condition of those who live in totalitarian countries, we must remember that we live as a community and not as individuals each trying to please himself. Many things, some no doubt not to our liking, have to be done for the common weal, and we must do them. In other words by being free we often have to curtail our own liberty. But this should be a willing act and not a response to force. Some years ago we set up a working rule in regard to our spiritual freedom as men—a man would not go far astray if he determined that he would not use his freedom if in the exercise of it he did anything likely to jeopardize the freedom of another.

At the outset of this discussion the value of ideas was mentioned and the knightly qualities of those who pursued them were referred to. We may conclude with a quotation which appears on the title page of Maritain's book. It comes from the fifth chapter of Saint Paul's letter to the Ephesians and the sixth verse:

> Look therefore carefully how ye walk, not as unwise, but as wise, redeeming the time, because the days are evil.

Current Comment.

THE ACTIVE PRINCIPLES OF THE NEURO-HYPOPHYSIS.

IT is over thirty years now since it was shown by several groups of workers that an extract from the posterior lobe of the pituitary could be split into two portions which showed quite different physiological effects. The active principle contained in one portion—pitressin or vasopressin—caused contraction of plain muscles, rise of arterial blood pressure and antidiuretic effects when injected into an animal. The active principle of the other portion—oxytocin or pitocin—caused contraction of the uterus. Numerous attempts have been made to obtain these two substances in a pure state without much success until recently. However, great advances have been made in the past four years. H. Heller[1] has reviewed these advances in detail, and S. Zuckerman[2] has given an extensive account of the method and the source of the secretion of the posterior pituitary lobe and hypothalamus. Much of what follows has been obtained from these reviews. None of the methods in use gave very pure substances until Du Vigneaud *et alii* used the newly developed method of counter-current distribution, a long and tedious process, but one which gave quite pure preparations of vasopressin and oxytocin. Investigations carried out on the somewhat impure extracts had shown that no substances other than amino acids and ammonia could be separated from either of the extracts. While with the impure substances it was not possible completely to separate the amino acids and to assess their relative amounts, there was enough evidence to suggest that both oxytocin and vasopressin were polypeptides. By hydrolysis of the pure substances Du Vigneaud *et alii* showed, by separating the liberated amino acids by a chromatographic method, that oxytocin was made up of one molecule each of eight amino acids—leucine, *iso*-leucine, tyrosine, proline, glutamic acid, aspartic acid, glycine and cystine—and three of ammonia. By a series of brilliant chemical investigations they showed further that the amino acids were arranged as follows:

CyS. Tyr. *i*-Leu. Glu. Asp. CyS. Pro. Leu. Gly.,

with ammonia attached as amide groups on glycine, glutamic acid and aspartic acid. Another series of brilliant investigations led to the synthesis of pure oxytocin, which had exactly the same activity as the purified natural product.

In a similar series of investigations the constitution of vasopressin was determined and its synthesis achieved. Vasopressin also contains eight amino acids, six of which are in both oxytocin and vasopressin, but in vasopressin *iso*-leucine is replaced by phenylalanine and leucine by arginine in ox pituitary and leucine by lysine in hog pituitary.

CyS. Tyr. Phe. Glu. Asp. CyS. Pro. Arg. Gly.

Experiments have been carried out on the biological activities of the pure or nearly pure oxytocin and vasopressin. It has been found that oxytocin has neither pressor nor antidiuretic activity, and the milk-ejecting activity is equivalent to its oxytocic potency. On the other hand pure vasopressin has an oxytocic activity equivalent to about five oxytocic units to 100 pressor units. The ratio of antidiuretic activity to pressor activity of synthetic vasopressin was found to be 1:1. The two activities are therefore due to the same chemical compound. The site of formation of oxytocin and vasopressin has been the subject of much investigation. A difficulty is that the posterior pituitary lobe has not a glandular structure, and it is difficult to believe that its glial cells could secrete. There is sufficient evidence now that the neurohypophysis with the hypothalamic nuclei and the axons of the supraoptico-hypophysial tract form a morphological and functional entity. In man and higher vertebrates certain cells (apparently nerve cells with neurofibrils and axons) contain, as well as Nissl substance, cytoplasmic granules of various sizes. These stain deep blue with Gomori's chrome-hæmatoxylin-phloxin stain. This blue-staining material apparently represents scretory substance. Almost certainly it flows from the cell bodies through the axons to the posterior part of the pituitary. When the pituitary stalk is cut, this material accumulates rostrally to the cut. It has been estimated that 25% to 30% of the total bulk of the *pars nervosa* consists of this secretory substance packed in nerve fibres—the Herring bodies. These are spatially related to the glandular blood vessels. Extracts of the supraoptic and of the paraventricular nuclei show strong pressor, antidiuretic and oxytocic activity. The association between the Gomori-positive material and posterior pituitary lobe activity seems to be complete. There is some evidence that the substance extracted from the hypothalamus is pure vasopressin. Whence then comes the oxytocin? A replacement of amino acids in vasopressin to make oxytocin does not seem likely. The answer cannot yet be given.

Dehydration of animals, lasting more than about three days, causes a marked diminution in the amount of antidiuretic substance which can be extracted from the neurohypophysis, and parallel with this is a lessening in the amount of Gomori-positive substance in the pituitary and hypothalamus. Oxytocic activity is also reduced. The amount of stainable material increases when water is again given. Heller states the present position as regards secretory activity as follows: "A variety of stimuli which may be of peripheral or central origin, and which may be nervous or humoral, are conducted to the hypothalamic nuclei. From there nervous impulses pass through the supraopticohypophysial tract and cause the release of hormone(s) from the neurohypophysis. This view leads to the endowment of the neurosecretory cell with a double function, namely, that of receiving and conducting impulses and that of elaborating and transporting the substance which it releases."

Although the pure substances vasopressin and oxytocin have been prepared, it is by no means certain in what way these principles are associated with Gomori-positive material nor in what form they exist in the gland and in the circulation. There is evidence that the Gomori-staining material is a lipid or a lipoprotein which acts as a carrier for the active polypeptides, preventing their release in the cells. Whether the oxytocin and vasopressin are passed into the blood-stream separately or combined in a large protein molecule together is not certain. The bulk of evidence seems to favour separate secretion of oxytocin and vasopressin, possibly combined with proteins, as is the case with thyroxin.

[1] *J. Pharm. & Pharmacol.*, April, 1955.
[2] *Lancet*, April 17, 1954.

ACUTE NEPHRITIS.

While Bright's description of the clinical picture of nephritis left little to be added, understanding of other aspects of the disease has been built up very slowly. For some years it has been recognized that acute nephritis nearly always occurs as a sequel of infection by *Streptococcus pyogenes*. That its onset was well after the onset of the infection suggested the possibility of a "hypersensitivity" or "immune reaction", and Masugi's classical work on the production of experimental nephritis seemed to support this hypothesis. He produced nephritis in rats by giving them injections of serum from rabbits which had been given repeated injections of suspensions of rat kidney. Many other experimenters have produced nephritis in animals by varying techniques which have in common the production of an "immune reaction" in the kidneys. More recently K. Lange and his associates[1] have been able to demonstrate antibodies to human kidneys in the human disease. Not only have they been able to do this, but

[1] *Pediatrics*, February, 1955.

they have shown that the fall in the level of complement in the blood in acute nephritis is of the type associated with immune reactions and is not due to urinary loss.

Evidence bearing on the nature of the antigen and the epidemiology of the disease has likewise been accumulating. C. H. Rammelkamp and his colleagues,[1] at the Warren Air Force Base, Wyoming, have provided an explanation for the long-recognized fact that cases of nephritis not infrequently appear in an explosive local epidemic form. Type 12 β hæmolytic streptococcus has been isolated in almost all such outbreaks. Whereas some 3% of all types of hæmolytic streptococcal infection appear to be followed by acute rheumatism, nephritis seems to follow infection only by this particular type of streptococcus. Thus we have the concept of nephritogenic strains of streptococci. From evidence gained in such epidemics it has been suggested that for every patient presenting with acute nephritis some 20 pass unrecognized unless a specific search is made.

Similar clarification of our knowledge seems to be acquired more slowly in the field of therapy. Thomas Addis's[2] insistence on the value of rest for the kidney, meaning not only bed rest but rigid protein and salt restriction, has lost much support. R. S. Illingworth, M. G. Philpott and J. Rendle-Short[3] treated 22 children suffering from acute nephritis with a low protein diet and 20 with the normal ward diet and could find no difference in the response of the two groups. The clinical impression that gross œdema and hypertensive encephalopathy have been less frequent since rigid salt restriction in the initial phase of treatment became general has lent support to this measure, but recently the necessity for this too has been questioned. Another vexed question has been the duration of bed rest. Here it has been suggested that most patients may safely be discharged to their homes after a week in hospital on limited activity. A. M. Fishberg,[4] however, still recommends bed rest until improvement has become very slow, and, while granting that a normal diet should be resumed when hypertension and œdema pass, feels that rigid salt restriction, low protein intake and a plentiful caloric supply are desirable in the early phase of the disease. The theoretical bases for these measures have some force; so that, while the battle of controlled series continues, the safest course may well lie in following his suggestions.

CLINICAL ASPECTS OF DISSEMINATED SCLEROSIS.

In the 120 years since the pathology of disseminated or multiple sclerosis was described by Cruveilhier considerable information has been obtained about all aspects of the disease. Despite this, the final key to the problem, an understanding of the ætiology, continues to elude us. Douglas McAlpine[5] has recently entered a plea for a return to the clinical study of the disease and much of his paper is designed to show in what ways the clinician may contribute. The disease itself seems to have changed little over the past century or so, although there may be a tendency for more cases to occur in the fifth decade, as W. R. Brain[6] has pointed out. McAlpine, dealing with the natural history of the disease, emphasizes the tendency towards a familial incidence, although this seems scarcely great enough to indicate a primarily genetically determined disorder. On the other hand, no particular environmental factor, other than a predilection of the disease for the more temperate zones, can be clearly incriminated; an annotation in the same journal draws attention to some suggestions of dietetic factors which require further investigation. McAlpine, reviewing his own work as well as that of others, considers that about 10% of patients suffer some antecedent infection, usually of the upper respiratory tract, while many others complain of malaise, lassitude and other indefinite symptoms at or about the time of onset of neurological symptoms. In any disease of unknown ætiology trauma is usually stated to be an aggravating or precipitating factor, but McAlpine presents statistically significant evidence of a higher incidence of antecedent trauma among multiple sclerosis patients than among a series of controls. Similarly, recent, although not remote, allergic manifestations are commoner in these patients.

The mode of onset of multiple sclerosis is very variable, but certain well-recognized patterns emerge from McAlpine's analysis of 309 subjects of the disease treated as in-patients in the same unit. He states that over two-thirds of patients present with a single symptom, the commonest (about 20%) being due to retrobulbar neuritis. About 15% present with paræsthesiæ, and a similar number with muscular weakness, usually localized to one limb; a combination of motor and sensory symptoms occurs in approximately 10% of new patients. In any attempt to establish the diagnosis at this stage particular attention should be paid to transient episodes of a few minutes' or hours' duration of blurring of vision, pins and needles, diplopia or other neurological disturbance; these are likely to be related to periods of exertion or mental stress. For more detailed consideration of the early symptomatology we refer our readers to the excellent account given in this journal[1] two years ago by I. M. Allen in one of the "Special Articles for the Clinician" series; in this the variable course is also well described.

Probably the most significant single factor in the clinical diagnosis of disseminated sclerosis lies in the demonstration of physical signs, and to a lesser extent in the presence of symptoms, which cannot be explained on a basis of a solitary lesion in the central nervous system. This applies particularly in those cases in which the chief feature is a progressive paraplegia in older patients, when the possibility of a spinal tumour or cervical spondylosis must be considered. Although there are possible points of differentiation in the history (notably previous transitory paræsthesiæ in the case of disseminated sclerosis), McAlpine found the most frequently valuable sign to be the presence of nystagmus. Examination of the cerebrospinal fluid by means of the Lange colloidal gold test showed a paretic or mid-zone curve in two-thirds of McAlpine's cases of multiple sclerosis, while a mid-zone curve of partial precipitation was found in two of twenty-eight cases of cervical spondylosis. Myelography will also help in the exclusion of a tumour.

Reverting to the question of the clinician's contribution to an understanding of this puzzling disease, McAlpine draws two conclusions in particular which are significant in this regard: the abrupt onset and tendency to remission and recurrence are likely to be clues to the ætiology, and the variable behaviour of the disease in its early stages must depend on the patient's reaction to it. These conclusions he regards as in accord with the allergic theory of the cause of the disorder, in support of which he offers several other clinical observations such as the familial incidence and the presence of other allergic manifestations in many cases.

There is nothing conclusive in these arguments, and there is little that is remarkably new in McAlpine's present paper. What is refreshing is his emphasis on the important role of the clinician in research on such problems.

BREATHING EXERCISES IN PULMONARY EMPHYSEMA.

From the pathological viewpoint, pulmonary emphysema implies structural changes in lung tissue of which alveolar "overinflation" and loss of elasticity are two of the chief manifestations. It is not to be expected that physiotherapy

[1] *Pediatrics*, January, 1955.
[2] "Glomerular Nephritis", MacMillan & Co., New York (1948).
[3] *Arch. Dis. Childhood*, December, 1954.
[4] "Hypertension and Nephritis", Lea & Febiger, Philadelphia, 1954.
[5] *Lancet*, May 21, 1955.
[6] "Diseases of the Nervous System", London, 1951.

[1] M. J. AUSTRALIA, June 13, 1953.

will influence permanent structural changes to any extent, but it is common to find patients who have benefited from breathing exercises aimed at improving diaphragmatic movement, reducing the activity of the accessory muscles of respiration, and modifying the "position of full inspiration" which appears to be assumed by the chest in this condition. As long as it is appreciated that these aims are based on ill-understood—perhaps misunderstood—accompaniments of emphysema and not upon the pathological processes involved, then the role of physiotherapy can be viewed in appropriate perspective. In other words, it is possible that the patient may be taught to make the best of a bad chest. Unfortunately, improvement of this order is difficult to assess objectively with techniques at present available. E. J. M. Campbell and J. Friend[1] have recently taken electromyographic recordings and performed a variety of ventilatory function tests on 12 emphysematous patients before and during breathing exercises, and also after a period of some weeks of this treatment. The exercises were directed at promoting relaxation, especially of the accessory muscles of respiration, prolonging expiration and mobilizing the diaphragm, along the lines laid down by Jocelyn Reed.[2]

Their observations indicate, in brief, that those aspects of ventilatory function which are obviously under voluntary control, under the conditions of the experiments were altered in the expected directions. Thus, the rate of breathing was slowed considerably, the depth increased and expiration duly prolonged with evidence of associated contraction of the abdominal muscles, for the test period during which the patients were deliberately performing the exercises. On the other hand, the more fundamental abnormalities of pulmonary function tests in emphysema, the reduced mixing efficiency of the lungs for inspired helium and the presence of a large "poorly ventilated space" were essentially unchanged. There was also no change in the pattern of activity of the sterno-mastoid muscle (used as an indicator of accessory muscle activity), although some reduction of its intensity of action was observed occasionally. Campbell and Friend point out that the prolongation of expiration led to an inspiratory phase which was rapid, and which in itself tended to introduce accessory respiratory muscles and to negate any effort to relax them. In fact, the exercises were conducted, and presumably taught, at the unphysiological rate of nine breaths per minute, on the average.

The above conclusions relate only to the "immediate effects" of breathing exercises, but Campbell and Friend remark that three months later, the exercises being continued, there was no change demonstrable in the total lung capacity or in the volumes of any of its component parts, and no improvement in mixing efficiency or maximum breathing capacity. They appreciate that it would be unwise to condemn breathing exercises as valueless on evidence provided by studies such as these. In this connexion it is interesting to note their observation that exertional dyspnœa in several of the patients was apparently more readily relieved by "exercise breathing" than by "natural breathing"; this group in particular would repay careful study from both clinical and physiological points of view. The immediate practical application of their work lies in their emphasis on the futility of prolonging the expiratory phase of the breathing exercises to the point where the rate becomes too low to be maintained in comfort during slight exercise, or even at rest unless inspiration is hurried.

As hinted at in the first sentences of this comment, the otherwise negative results must be regarded as challenging rather than disappointing. To suggest investigation of why some patients are improved subjectively—and objectively, in so far as the performance of some of the everyday tasks in life are objective—may seem to be merely restating the problem, but at least it offers a more positive approach. Dyspnœa is a subjective sensation not as yet susceptible of measurement, so that in these days there is a grave risk that the patient's views on it may be regarded as unreliable. After all, nothing facilitates it so much as an increasing awareness of it, and breathing exercises may do no more than give the patient a little confidence in his ability to shift air and a little appreciation of the fact that in all but the most desperate circumstances he still has a small reserve upon which to draw. If the patient can be given even this little extra degree of comfort and confidence, the physiotherapist does not toil in vain.

[1] *Lancet*, February 12, 1955.

[2] "Diseases of the Chest" (ed. G. Marshall and K. M. A. Perry), London, 1952.

VIOMYCIN IN THE TREATMENT OF TUBERCULOSIS.

VIOMYCIN is an antibiotic used exclusively in the treatment of tuberculosis. It received recognition at the Twelfth Conference of Tuberculosis held at St. Louis, United States of America, in February, 1953, and has since been used, though not extensively, in America, in England and on the Continent. Alexander Balogh[1] has reported his findings on the properties and uses of viomycin after in-vitro and limited in-vivo (48 cases) trials. Viomycin was first separated in 1947 from the filtrate of streptomycin cultures. It is a basic polypeptide, which reacts with organic and inorganic acids to form neutral salts. The product in clinical use, viomycin sulphate, is readily soluble in water and moderately stable at a pH of 5·5 and a temperature of 20° C. It is insoluble in organic solvents. Its spectrum of action is smaller than that of other antibiotics, and it is more active *in vitro* than *in vivo*. Clinically it is less effective than streptomycin, but more so than PAS. Resistant strains of the mycobacterium take some months to develop, and there is no cross-resistance between viomycin and streptomycin or INH. Like streptomycin, it is more effective and less resistance is developed to it when it is in combination with other anti-tuberculosis preparations; and when it is so used, its dosage can be appreciably lowered. This is of great importance, as its toxicity is high. Its side reactions are allergic skin reactions, renal damage (albuminuria, anuria and uræmia), vestibular and eighth nerve damage, electrolyte disturbances (lowering of serum calcium and potassium levels), electrocardiographic changes in the *T* wave and *ST* segment, and paræsthesiæ. It is therefore used only for patients who are streptomycin and INH resistant. Most of Balogh's patients had bilateral pulmonary tuberculosis with cavitation. Like the other anti-tuberculosis drugs, it has little effect on fibrosis or extensive caseation. Viomycin is given intramuscularly. It causes no pain and is rapidly absorbed, and 60% to 100% is excreted in the urine within twenty-four hours. It is therefore given daily, with initially small doses, increasing in the absence of toxic symptoms up to two grammes per day. The total dose should not exceed 50 grammes. Up to 15 milligrammes have been injected intrathecally in cases of tuberculous meningitis without ill effect.

The results of Balogh's therapeutic trial were very satisfactory, considering the severity of his cases. In several instances, viomycin was of life-saving importance. Most patients showed rapid improvement in general health, followed more slowly by improvement in the blood sedimentation rate and X-ray appearances and frequent reversion of the results of sputum examination from positive to negative. Similar conclusions were reached by H. G. Schaffeld, B. Garthwaite and J. B. Amberson,[2] of Columbia University. They used the drug in dosages of 50 to 60 milligrammes per kilogram of body weight, daily or on a twice weekly schedule, for 30 to 263 days, keeping the patient at bed rest, with no other major therapy. Toxic reactions were observed mainly in the auditory system and in the plasma electrolyte balance. They were not regarded as prohibitive. These workers concluded that, while viomycin was less effective than streptomycin or INH, its use was indicated for patients who were infected with tubercle bacilli resistant to the latter two drugs and who required further chemotherapy.

[1] *Wien. med. Wchnschr.*, April 12, 1955.

[2] *Am. Rev. Tuberc.*, April, 1954; quoted in "The Yearbook of Drug Therapy", 1954-1955 Series, page 367.

Abstracts from Medical Literature.

THERAPEUTICS.

"Apresoline."

D. J. REINHARDT AND J. M. WALDRON (*J.A.M.A.*, August 21, 1954) describe a *lupus erythematosus*-like syndrome complicating "Apresoline" (hydralazine) therapy. A daily dose of 400 milligrammes of hydralazine was given. Later, 60 milligrammes of dibenzyline, 700 milligrammes of hydralazine and 2·4 milligrammes of protoveratrine were given daily for six months. Then the patient developed joint pains. When the drugs were stopped, she recovered. The drugs were repeated, and the patient developed multiple joint pains and fever. Tender lymph nodes appeared in the cervical and axillary regions, and a facial lesion with enlargement and pigmentation appeared. Biopsy revealed marked collagenous scarring and lymphocytic infiltration in the deep corium. Cortisone was given with relief, but had to be continued for three months. The blood pressure rose again, and the skin condition returned. Anæmia and albuminuria developed, and the disease resembling disseminated *lupus erythematosus* continued. The only symptom before treatment commenced was occasional morning headache. Treatment was instituted because the blood pressure was 170 millimetres of mercury, systolic, and 120 millimetres, diastolic, and the heart was enlarged with a systolic aortic murmur. The patient still has hypertension and the heart condition *plus* generalized *lupus erythematosus*.

Autonomic System in Gastro-Intestinal Disease.

J. E. THOMAS (*J.A.M.A.*, January 15, 1955) discusses the autonomic nervous system in gastro-intestinal disease. He states that peptic ulcer and ulcerative colitis have been mentioned as showing evidence of overactivity of the parasympathetic nerves. This overactivity has been countered by vagotomy, which, though risky, gives some good results. Anticholinergic drugs depress the peripheral sensory nerve endings, but they have side effects in dryness of the mouth and blurred vision. It is said that by relieving pain they may induce a situation in which pain is relieved while the ulcer progresses. Neither vagotomy nor anticholinergic drugs have been as effective for ulcerative colitis as for peptic ulcer.

Choline Theophyllinate.

R. C. BATTERMAN *et alii* (*J.A.M.A.*, January 15, 1955) discuss the treatment of congestive heart failure and anginal syndrome with choline theophyllinate. They state that aminophylline is effective when given parenterally; but given orally and rectally it is of doubtful value. Sixty-eight patients were studied. Fifty to 400 milligrammes (average, 200 milligrammes) of choline theophyllinate were given three or four times daily, in cases of congestive failure and the anginal syndrome. Two hundred milligrammes daily was the most satisfactory dose. Choline theophyllinate was effective in cases of congestive failure in inducing improvement with a reduction in frequency of the use of mercurial diuretics. For angina similar benefit was observed, the use of glyceryl trinitrate being much diminished when choline theophyllinate was used. Nausea and loose bowel actions were rarely encountered. With choline theophyllinate toxic effects were rare, and tolerance of the drug was not observed.

Nitrofurantoin.

H. B. HASEN AND T. D. MOORE (*J.A.M.A.*, August 21, 1954) describe studies on nitrofurantoin ("Furadantin") (N - 5 - nitro -2 furfurylidene - 1 - amino hydantoin). In 100 cases of acute and chronic urinary infections, this drug was most useful for *Proteus vulgaris* and refractory *coli-ærogenes* infections in the urine. Infections with *Klebsiella pneumoniæ* and *Streptococcus fæcalis* were also controlled. Good results were obtained with urinary infections due to other organisms. The dose given was 100 to 150 milligrammes four times daily, at meals and at bedtime, with a glass of milk. Otherwise nausea was experienced. Nausea or vomiting was overcome by using an enteric-coated tablet.

The Anæsthetist and the Management of Intractable Pain.

J. J. BONICA (*Proc. Roy. Soc. Med.*, December, 1954) states that the management of intractable pain is a difficult clinical problem which may require the joint effort of several physicians in various fields. The anæsthetist or any other physician who is proficient in executing analgesic blocks can play a significant role in the management of patients suffering from intractable pain. A correct diagnosis, an understanding of pain mechanisms, knowledge of the anatomy and neurophysiology of pain, thorough skill and knowledge of the techniques and agents best suited for various analgesic blocks and an objective assessment of results are important prerequisites. Without these, optimal results cannot be obtained. The author discusses the value of analgesic blocks in the management of the various pain syndromes.

Chloroquine for Lichen Planus and Other Dermatoses.

S. AYRES III AND S. AYRES, junior (*J.A.M.A.*, January 8, 1955), state that chloroquine tested empirically in the treatment of several dermatoses has been effective in some cases of *lichen planus* and verruca, yet has failed in others. The number of favourable responses in these two conditions was sufficient to encourage further investigation. The drug was of no benefit in cases of psoriasis. It caused severe *dermatitis medicamentosa* in three cases.

Relief of Cardiac Ischæmia and Anginal Pain.

H. I. RUSSEK *et alii* (*Am. J. M. Sc.*, January, 1955) have sought to make an objective evaluation of the drugs in common use for the relief of cardiac ischæmia and anginal pain. The specific effects of each drug on the electrocardiographic response to standard exercise were recorded and compared in carefully selected cases. Glyceryl trinitrate in ordinary therapeutic doses was found to exert a strikingly favourable effect on the abnormal electrocardiographic response to exercise; but papaverine did so only in large doses (one to two grains given intravenously or three to eight grains given orally). Pentaerythritol tetranitrate was found to be the most effective drug for prolonged prophylactic treatment, a dose of 10 to 20 milligrammes remaining effective for four to five hours. Alcohol and morphine both rapidly relieved pain, but did not influence the electrocardiographic response to exercise.

Electrolyte Depletion in Pyloric Stenosis.

D. A. K. BLACK AND R. P. JEPSON (*Quart. J. Med.*, October, 1954) have studied the balance of sodium, potassium and chloride during recovery from pyloric stenosis in five patients treated by partial gastrectomy and also in another six patients with peptic ulcer but without symptoms of pyloric stenosis. In general, there was retention of sodium, potassium and chloride during recovery from pyloric stenosis; after operation in the absence of clinical stenosis there was retention of sodium and chloride only. During recovery from pyloric stenosis fixed base was retained in excess of chloride. It is suggested that the extracellular fluid alkalosis commonly observed in pyloric stenosis is often related to potassium depletion rather than to loss of chloride. Intracellular acidosis accounts for the retention of base in excess of chloride during recovery. It is therefore suggested that treatment with potassium has a place in the management of pyloric stenosis.

Treatment of Benign Pigmented Moles.

G. H. EKBLAD (*Arch. Dermat. & Syph.*, October, 1954) states that the treatment of pigmented moles has long been controversial. He uses the terms mole and nævus synonymously with the term *nævus pigmentosus* to designate any lesion containing nævus (melanocyte) cells. The term melanoma is used synonymously with the term malignant melanoma to designate any lesion containing malignant nævus or melanomatous cells. A junctional nævus is defined as one with nævus cells at the epidermodermal junction; an intradermal nævus consists of nævus cells confined to the dermis. A compound nævus consists of both junctional cells and intradermal nævus cells. The annual rate of malignancy is one per million. The problem is which moles to treat, and how. The author states that most moles obviously need not be treated. The reasons are obvious in those moles treated for cosmetic reasons. Prophylactically it is probably good practice to remove moles on the soles, palms, pulp of the fingers and toes, and genitals, and those moles subjected to repeated trauma. In view of the small number which become malignant, it is probably equally poor practice to alarm unnecessarily

patients with such lesions. Moles showing any suspicious changes should be excised and histologically examined. When a clinically benign lesion is treated by excision, adequate and not radical excision is sufficient. Adequate excision is one which leaves a margin of about two millimetres of normal skin. The junction type nævus and not the intradermal nævus is the potentially malignant lesion. Clinically, the intradermal nævus is usually an elevated, smooth papular lesion. It may, however, be verrucose or pedunculated. It may be flesh-coloured to fairly heavily pigmented. It may be excised or shaved off flush with the skin for biopsy, the base then being lightly desiccated. If the biopsy shows an intradermal nævus, the remaining intradermal cells need not be removed. Application of carbon dioxide or trichloracetic acid, electrolysis and electrodesiccation are frequently used methods of treatment. In the treatment of compound-type nævi, excision is the method of choice. As junction-type nævus is a dangerous type, excision is the method of choice.

NEUROLOGY AND PSYCHIATRY.

Psychiatric Aspects of Military Manpower Conservation.

I. BERLEIN (*Am. J. Psychiat.*, August, 1954) enumerates the following lessons from experience in World War II: (i) At the induction level only those men who are obviously unfit should be rejected. (ii) During training a psychiatric team or "consultation service" should be available to help the command capitalize on positive factors rather than help the man capitalize on negative ones. (iii) Military psychiatrists should strive to influence officers to give men better leadership and to stress conditions leading to better morale. (iv) Psychiatric casualties except psychotics should not be hospitalized in conventional hospitals. It is the experience that few men in proportion return to duty from general hospitals. They should be concentrated, firstly, inside their divisional area for near-front therapy, rest, recuperation and retraining with a positive back-to-duty philosophy, and secondly, in their army area with similar facilities. Past misconduct and prison sentences or neurotic traits are not in themselves sufficient evidence of inability to become an efficient soldier.

Analysis of Some Factors in Spontaneous Subarachnoid Hæmorrhage.

S. A. JACOBSON (*Arch. Neurol. & Psychiat.*, December, 1954) has analysed a major series of cases of spontaneous subarachnoid hæmorrhage; the total number of cases was 1490. He finds that the mortality rate is between 40% and 50%. The deaths fall into two categories: that in which death is due to the first attack (28%) and that in which the patient succumbs to a subsequent hæmorrhage. A consideration of the relation of the age of the patient at the onset of the hæmorrhage shows that age has no effect on the mortality rate. Approximately 10% of all patients with subarachnoid hæmorrhage are maimed to a significant degree, in addition to those who die. It is not clear from the literature just how often there is an aneurysm when there is subarachnoid hæmorrhage. The best inference is that it occurs in the neighbourhood of 50% of cases. A frequent contraindication to surgery is multiplicity of the aneurysm, which is present in about 13% of all patients who have aneurysms.

Recovery from "Muscular Dystrophy".

F. J. NATTRASS (*Brain*, December, 1954) discusses the literature regarding recovery from muscular dystrophy. He reports eight cases in all of which the patient had recovered from a condition diagnosed by experienced observers as progressive muscular dystrophy. He considers that two of these patients may have been suffering from benign congenital myopathy and another from dermatomyositis. In the remaining cases the clinical findings were characteristic of the childhood or Duchenne type of muscular dystrophy save for the facts that one patient suffered two separate and distinct episodes of muscular weakness and that in all five cases the onset of the disease was much more rapid than is usually the case in classical progressive myopathy. Evidence is advanced that in these five cases the patients were suffering from polymyositis. The pathological changes in muscle observed in polymyositis are very different from those of muscular dystrophy. The prognosis of polymyositis is very much better than that of dystrophy, and improvement is possible after treatment with ACTH or perhaps wheat-germ preparations.

SURGERY.

Hiatus Hernia.

N. R. BARRET (*Brit. J. Surg.*, November, 1954) pays tribute to P. R. Allison of Leeds, who presented a rational basis for operation performed to relieve patients suffering from hiatus hernia and related conditions. He points out that the congenital short œsophagus is not a hernia, but is relevant to the discussion because it may cause symptoms which are comparable. In these cases, the lower end of the gullet is lined by columnar gastric epithelium to a lesser or greater degree. Congenital short œsophagus cannot be diagnosed with certainty before the gullet is examined at thoracotomy. Its presence may be suspected at endoscopy if the gastric epithelium reaches an unduly high point in the gullet; but the diagnosis of congenital short œsophagus can be confirmed only by observing that, in spite of gastric lining of the gullet, there is no peritoneal sac in the mediastinum, and the anatomy of the left gastric artery is normal. Paraœsophageal hernia is a true hernia in which parts of abdominal viscera ascend into a preformed peritoneal sac lying in the mediastinum. The most likely explanation of the presence of the sac is persistence of the pneumato-enteric recess on the right side of the gullet. The anatomical points about paraœsophageal hernia are these. The œsophagus is normal in length and anatomy. The cardia lies in its proper place, and the left gastric artery tethers it effectively to the posterior abdominal wall. The lesser curve of the stomach is held between its two fixed points, the cardia and the pylorus; and thus the greater curve of the stomach swings on the cardio-pyloric axis to occupy the top of the hernial sac. It is rare for any viscus, apart from the stomach, to occupy the sac; but the colon may be drawn on as well. The sac is always complete, and the hernia is not *en glissade*. The symptoms are described, and the author states that some of these patients can be treated conservatively if symptoms are mild and there is nothing to hint at gastric ulceration. The basis of surgical management is to reduce the hernia, to repair the defect in the diaphragm by narrowing the œsophageal hiatus with stitches placed between the aorta and the œsophagus, and to fix the stomach below the hiatus. Sliding hiatus hernia is about ten times more common than all the others put together. The hernia is small and *en glissade*. The cardia and adjacent parts of the greater and lesser curvatures slide up into the mediastinum, carrying a small sac of peritoneum applied to the left side of the stomach. The right side of the stomach includes the bare area and is devoid of peritoneum. The sac is always empty, and its upper margin marks the junction of the squamous and columnar epithelium inside the lumen. The branches of the left gastric artery, which normally supply these parts, pass up into the mediastinum with the displaced stomach. The author discusses various theories of ætiology of hiatus hernia and the many ideas of why the cardio-œsophageal junction is incompetent. He considers that to cure reflux œsophagitis, the hernia should be reduced; if the œsophageal hiatus is large, it may be reduced in size in the hope that this manœuvre will help to prevent recurrence of the hernia; the œsophago-gastric angle should be reconstituted by fixing the cardia below the diaphragm and so allowing the fundus of the stomach to balloon up under the dome. The author is satisfied that a fringe of mucosa at the œsophago-gastric junction acts as a valve and that the measures enumerated correct this valve action.

Upper Alimentary Tract Hæmorrhage in Liver Cirrhosis.

D. FAINER AND J. HALSTED (*J.A.M.A.*, January 29, 1955) state that hæmorrhage from the upper part of the alimentary tract in patients with cirrhosis of the liver may be extraœsophageal in origin. Hæmorrhage from the upper part of the alimentary tract occurred in 38% of 200 patients suffering from Laennec's cirrhosis. Œsophageal varices and gastric varices were the source of the bleeding in 59·2% and 2·6% respectively. Peptic ulcer and gastric erosion were the source in 18·4% and 5·3% respectively. In 22 patients, two or more lesions of the upper part of the alimentary tract were able to be demonstrated. In 12 of these 22 patients, both peptic ulcer and œsophageal varices were present. In a series of 1278 consecutive autopsies, peptic ulcer was present in a significantly greater number of patients with than without cirrhosis.

On The Periphery.

THE VILLAGE OF BANCHORY-TERNAN: SOME MEMORIES OF FRANCIS ADAMS AND OF THE RESURRECTIONISTS.

A LITTLE over a century ago a most industrious general practitioner, "hard-headed and warm-hearted, . . . a man of thought and action not less than a man of vocables and learning", published the most scholarly edition of a Greek medical work in the English language to this day, namely, "The Seven Books of Paulus Ægineta". The achievements of Francis Adams, M.A., M.D., LL.D., the son of a probably illiterate gardener, amply justify a brief visit to the district in which he worked, the rugged country in which Macbeth is said to have fought his last battle, and the valley which a possibly over-enthusiastic Scottish historian has described as possessing "the beauty and warmth . . . of far-famed southern resorts".

The quaint village of Banchory lies sixteen miles from Aberdeen along the winding road which closely follows the north bank of the Dee to Balmoral and Braemar. The road approaches the township along the side of the hills, so that on the left the ground falls away rapidly towards the river. Here, over a high stone wall, the old cemetery may be seen for an instant before a series of curves transforms the high road into a delightful high street lined intimately by stone shops and houses. This change of character is virtually marked by the intersection on the left of Dee Street: a gateless entrance to the corner house, "Bellfield", carries the brass plates of two doctors, the successors to the practice of Dr. Francis Adams. The driveway curves away to the right towards the front door, which is hidden from view by tall trees and the forward projection of the front rooms of the house: a branch of it proceeds directly back, parallel to the main road, to the surgery entrance and the stables—or garage. The house itself is comparatively new, having been built by Dr. Adams's son-in-law and immediate successor, Dr. Thomas MacHardy, in 1893. The site and general plan are almost identical with those of Adams's original home, the first stone house to be built in Banchory (as it appears in an old picture in the possession of the present owners). However, the tower in which Adams worked at his translations through the early hours of the morning is no longer there.

Dee Street is narrow, and it descends so rapidly that, scarcely fifty yards down it towards the river, Adams's lawn and the top of its retaining wall are at eye level. It is therefore not surprising that his memorial should be unknown to a proportion of the villagers whose predecessors, by public subscription, financed its erection shortly after his death. But there it is, in his own garden, about fifteen feet of it, six feet off the road and about six feet above it. Nestling in a grove of trees, the red granite obelisk resembles a lonely tombstone, although in fact his body lies elsewhere. The Latin inscription may be translated as follows:

> In memory of Francis Adams, M.D., LL.D., of all physicians whom Scotland has produced the most familiar with the treasures of literature and with the resources of science. Long in this sequestered vale, far from Court or University, a true votary to Apollo, he devoted himself faithfully to Medicine and the Muses.

The memorial records his birth at Lymphanan, about six miles north of Banchory, in 1796, and his death in 1861 (in his home, of bronchitis and pneumonia), and the dedication *Carissimi Capititis Desiderio Amici Posuere.* "Sequestered vale" is a phrase he once used himself; the word Banchory is said to have meant "happy vale". It is indeed a modest, retiring memorial, as befits a man who refused the professorship of Greek in his own university and, it is said, a knighthood, in order that he might not have to leave his extensive general practice.

Before we leave Banchory there is a grimmer memorial to see. A short walk brings us back to the steps leading down through the new to the old cemetery, which is entered through an iron gate in the high stone wall, in the shadow of a circular watchtower. Built of the inevitable granite and dominating the graveyard, scarred with age and discoloured by weather and moss, this miniature fortress is a stark reminder that "the Aberdeen Medical School astonished the rest of the country not only by its indomitable perseverance through difficulties, but by a miraculous facility in procuring 'subjects' ". Here, from its upper storey, relatives watched over recently interred remains lest medical students, their teachers, or professional resurrectionists should choose to seek fresh material. The counter-measure, incidentally, was to place an adequate supply of whisky in the watch-house before dusk, a stratagem which is said to have reduced both the terror and the efficacy of the vigil. A window and peepholes allow all parts of the graveyard to be kept under vision, even the most remote corner being within shotgun range. An unusual feature of the Banchory-Ternan watch-tower is its bell, with a chain leading into the interior through the window. The date 1897 carved on the supporting wooden beam no doubt refers to its reconstruction at that time, for by then the tower had long since outlived its purpose. Mute witnesses to the anatomical enthusiasm of our predecessors, similar but less picturesque structures are to be found in many of the older Scottish graveyards. As the most architecturally satisfying example, the Banchory watchtower is represented by a small model in a series of exhibits illustrating the devices used to defeat the resurrectionists in the historical section of the Anatomy Museum at Marischal College, Aberdeen.

Time does not permit us to examine each of the numerous graves marked "Adam" on the two centuries old cloth map of the cemetery on view in the ground floor "room" of the tower. Visible from the doorway, however, is the red granite tombstone, so similar to the Adams memorial, which marks the grave of Dr. MacHardy. Close by, beneath the stained glass window of the Douglas vault (1773), lies Dr. George Read, of London, who was the first medical practitioner in the district about two hundred years ago.

Perhaps it is not a happy association to link the learned commentator upon Hippocrates, Aretæus and Paul, not to mention Robert Burns, with the activities of vulgar burkers, but the charm and interest of Banchory owe something to them both.

AN AUSTRALIAN MEDICAL GRADUATE IN BRITAIN.

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British Medical Association News.

SCIENTIFIC.

A MEETING of the Victorian Branch of the British Medical Association was held on March 26, 1955, at Warrnambool Base Hospital, DR. H. FURNELL, the President, in the chair. The afternoon session took the form of a clinical demonstration by members of the honorary medical officers of the hospital.

Bilateral Adrenalectomy.

DR. J. K. GARDNER showed a female patient, aged forty-four years, who in November, 1949, had undergone subtotal thyroidectomy for mildly toxic goitre, after preparation with methyl thiouracil. In March, 1950, she had reported because of a lump in the right breast. On examination of the patient, her weight was found to be nine stone four pounds. In the upper outer quadrant of the right breast a lump was palpable with the flat hand; it was rather diffuse and indefinite, but hard, and it was 1·5 inches in its long diameter. There was early skin retraction, but no attachment to muscles. No axillary glands were palpable. The other breast was normal. The diagnosis of carcinoma of the breast was made.

On April 6, 1950, radical mastectomy was performed; the axilla was satisfactorily cleared, and a few small, soft glands were removed. Macroscopic examination showed the growth to be a typical carcinoma. Microscopic examination of the tissue removed revealed carcinoma with an abundant dense connective tissue stroma. Most of the epithelial proliferation was of the intraduct type, but the tissue was infiltrated in many areas. Examination of sections of the axillary gland revealed only sinus catarrh, and no evidence of secondary deposits. No deep X-ray therapy was given after operation.

On February 25, 1953, the patient complained that her right arm had ached and her right shoulder had been painful for two or three months. Clinical examination revealed no abnormality in the axilla; the range of shoulder movements was good; tenderness was present over the outer aspect of the origin of the deltoid. X-ray examination

revealed some increased radio-translucency of the head of the humerus, but the cortical outlines were regular and intact. The radiological findings suggested arthritis of the shoulder rather than a metastasis.

On June 3, 1953, the patient's shoulder pain became more persistent and severe, and X-ray examination of the shoulder revealed increased rarefaction in the head of the humerus, a thin pencil line but no fracture in the cortex, and no periosteal reaction. It was thought that a secondary lesion was present. The patient was referred to the Peter MacCallum Institute for deep X-ray therapy, which was carried out; the ovaries were also irradiated, and the patient had not menstruated since. The shoulder pain was much relieved, and subsequent X-ray examination revealed some recalcification of the humerus. Hot flushes were troublesome about that time, but were controlled with hormonal treatment.

On April 14, 1954, the patient complained of swelling of the left knee without much pain. An X-ray examination in Melbourne revealed widespread osseous metastases. The patient was admitted to hospital on June 1 and given 100 milligrammes of testosterone three times a week. She was discharged from hospital after two weeks, to report for an injection of testosterone (100 milligrammes) every week and an implant (200 milligrammes) every two weeks. On July 7 the patient said that she was free from pain and could work. Treatment was continued by the injection of 100 milligrammes of testosterone every week and the implanting of 250 milligrammes every month.

On October 21 she complained of severe pain in the right hip, and of backache. She was admitted to hospital, and X-ray examination revealed multiple secondary deposits of carcinoma. By December 23 she was unable to leave her bed. Backache and pain in the right hip required for its relief four-hourly doses of morphine and aspirin mixture and morphine by injection at night.

In January, 1955, bilateral adrenalectomy was performed in two stages with an interval of nine days; the post-operative course was satisfactory. One week later she was receiving a maintenance dosage of 25 milligrammes of cortisone given by mouth twice a day, and was free from pain. On February 20 she was fitted with a spine brace and allowed to sit up; eight days later an X-ray examination suggested some bone regeneration in the lumbar part of the spine. On March 20 she was walking a little; she had some pain in the right leg from root irritation. She was well satisfied with the result of the operation.

Dr. Gardner, in discussing the case, said that some carcinomata—for example, those of the breast and prostate—appeared to be "hormone dependent". One line of treatment was to remove the ovaries; that had been first practised in 1896. Some 20% to 30% of patients derived benefit from the treatment; but some patients still had large amounts of œstrogenic substance in the urine. After adrenalectomy, first practised in 1945, control by cortisone had helped considerably with the problem of replacement therapy. Often a remarkable resolution of metastatic deposits occurred, especially those in bone. It had been stated that up to two-thirds of the patients were greatly benefited. The mortality rate was some 5% to 10%.

DR. T. H. ACKLAND said that Dr. Gardner had put the case for adrenalectomy very well; but it had to be stressed that in the presence of widespread pulmonary metastases the results were not so good. There did not appear to be any way of knowing which patients would be benefited by adrenalectomy. Sometimes both adrenals were removed at once, but that was not thought to be the best method.

Dr. Ackland then stressed the point that the original mastectomy should be really radical, and the internal mammary glands should be removed after the second, third, fourth and fifth costal cartilages had been removed.

DR. C. H. OSBORN said that he had had some experience of adrenalectomy in Cushing's syndrome, in which he had employed a two-stage operation. The approach was by removal of the twelfth rib, or often the eleventh and twelfth ribs, and then the adrenal could be exposed by a subpleural entry. Dr. Osborn supported Dr. Ackland's remarks about the removal of the internal mammary glands.

DR. FITZPATRICK pointed out that some overseas authorities were not very enthusiastic about treatment by adrenalectomy, but no one seemed to have a large enough series of cases spread over a long enough period of time for full knowledge of its use to be gained.

DR. K. HALLAM pointed out that pain was the presenting feature of the bone metastases, and that X-ray examination would often reveal the lesion. However, pathologists had shown that vertebræ could be largely replaced by tumour tissue without any X-ray changes.

DR. M. KELLY asked how much of the secondary spread was by the blood-stream and how much by the lymphatics.

Dr. Gardner, in reply, said that in the case under discussion the post-operative period was approached with trepidation, but that with the aid of cortisone no complications were encountered.

Carpal Tunnel Syndrome.

Dr. Gardner then showed two patients who presented the carpal tunnel syndrome.

The first was a married woman, aged forty-one years, who two years previously had complained of pain in the right upper limb from the shoulder to the hand, felt only at night, and present for two weeks. On examination of the patient, no abnormality was detected in the neck, shoulder or arm. "Nembudeine" was prescribed. A short time later the pain extended from the right elbow to the hand, and the thumb and first two fingers felt numb; numbness was also felt in the left hand. On examination of the patient, no abnormality was detected. In April, 1954, the pain in the right shoulder recurred, and extended to the elbow and down to all the fingers; it was much more severe at night. Stilbœstrol, 0·5 milligramme per day, was prescribed. X-ray examination of the cervical part of the spine revealed slight narrowing of the disk spaces between the fifth and sixth and the sixth and seventh cervical vertebræ, with minor lipping from the fifth to the seventh cervical vertebræ. In August, 1954, there was a further recurrence of the pain. The patient was referred to an orthopædic surgeon as possibly suffering from cervical disk herniation. A diagnosis of thoracic outlet syndrome was made and physiotherapy was suggested. On February 11, 1955, there was still another recurrence of pain; it was nocturnal, and both hands and forearms were affected, the left more than the right. There was numbness of all fingers except the little fingers. Slight wasting of the outer part of the thenar eminence was noted. A diagnosis of carpal tunnel compression syndrome was made. On February 18, with the patient under general anæsthesia, the left flexor retinaculum was divided. Relief was immediate; the patient had pain in the right hand, but none in the left.

The second patient suffering from carpal tunnel syndrome shown by Dr. Gardner was a married woman, aged fifty-eight years, who on February 16, 1955, complained that for six weeks she had awakened at night with bursting pain in the right thumb and numbness in all fingers except the little finger; usually the pain was accompanied by an aching pain up the forearm. Sometimes the pain came on during the day when she was doing work like ironing. The pain was so severe that she dreaded going to bed. On examination of the patient, the shoulder girdle and arm were normal. Slight wasting of the thenar eminence and hyposthenia of the right thumb were present. When the sphygmomanometer cuff was inflated to 200 millimetres of mercury, tingling was felt in the thumb after two minutes. A diagnosis of carpal tunnel compression was made. On February 19, with the patient under general anæsthesia, the flexor retinaculum was divided. The patient obtained immediate and complete relief.

Dr. Gardner referred to a third patient with a similar story, who had obtained complete relief from œstrogenic hormone. He showed that the present method of treatment had been first suggested in 1949, and that the reported results had been good.

DR. REID said that the carpal tunnel syndrome was quite common. He had had experience of 20 or 30 cases in women past the climacteric. Most of the patients had not been operated on, and the response to stilbœstrol was good; but menorrhagia often followed. Dr. Reid thought that endocrine therapy should be tried first. In unsuccessful cases, or when the condition occurred in male patients, he had operated, with uniformly good results. He had noticed that in all cases the median nerve was very large. He believed that the pain was due to ischæmia, which was worse at night and when the part became warm.

DR. G. FORSYTH said that it was possible to obtain good results with a diet of low sodium content, which suggested that the cause of the condition was œdema.

Dr. Kelly said that the symptoms were common in rheumatoid arthritis, and that in that disease the condition was inflammatory. He used a plaster splint with the wrist cocked up, and had not had to resort to surgery.

DR. G. NEWMAN MORRIS raised the question of the danger of œstrogens.

Dr. Furnell drew attention to the difficulty of diagnosing the cause of menorrhagia. He considered it always necessary to perform a diagnostic curettage.

Dr. Fitzpatrick asked whether tenosynovitis came into the picture in these cases.

Heart Failure and Anæmia in Pregnancy.

DR. SOBEY showed a female patient, aged twenty-four years, who had been admitted to the hospital on November 11, 1954, when twenty-six weeks pregnant. She had not been examined previously. Four hours before her admission to hospital she had suddenly felt dull, aching pain in the right side of her chest; this had been followed after half an hour by coughing, vomiting and extreme shortness of breath. The pain gradually eased, but the shortness of breath remained. On examination of the patient, she was seen to be very ill; she was pale and dyspnœic, and coughing frothy, blood-stained sputum. Her temperature was 99° F., her pulse rate was 140 per minute. The apex beat was diffuse in the anterior axillary line. Systolic murmurs were present at the apex and base, and numerous friction rubs were audible throughout the lung fields. The abdomen was enlarged to the size of a twenty-six weeks' pregnancy. No peripheral œdema was present. A diagnosis was made of acute left ventricular failure, possibly due to pulmonary embolism (no primary thrombus was discovered). The patient was put to bed and given "Digoxin" intravenously, morphine, anticoagulants, "Salyrgan" and penicillin. A number of special investigations were carried out. X-ray examination revealed an opaque area in the lower right part of the chest, and an enlarged heart; pulmonary hyperæmia was present. The hæmoglobin value was 35%. Over the next few days there was clinical and radiological evidence of improvement in the patient's condition, but she remained dyspnœic and ill.

On November 30 she was given very slowly a transfusion of packed red cells; after about two ounces had been given profuse vomiting began, with sweating, dyspnœa and shock, and the pulse rate rose to 180 per minute. Signs of pulmonary œdema were detected. The transfusion was stopped, and she was treated for acute left ventricular failure and slowly improved. Over the next few weeks she was given intravenous iron therapy and routine treatment for heart failure with added vitamins in the diet. Her anæmia decreased, her general condition improved and signs of left ventricular embarrassment disappeared.

On January 23, 1955, the patient was delivered of a normal female infant, with little trouble. Her condition continued to improve. At the time of the meeting she had no signs of heart failure, and the heart was clinically normal in size. Systolic murmurs were audible at the apex and base. The hæmoglobin value was 86%, the erythrocytes numbered 4,350,000 per cubic millimetre and the findings on examination of a blood film were normal; the leucocytes numbered 7550 per cubic millimetre, and the differential count was normal. A test meal examination revealed achlorhydria. Dr. Sobey said that points of interest in the case were (i) the diagnosis and ætiology of the cardiac lesions, (ii) the ætiology of the anæmia and (iii) future management of the patient, and prognosis.

DR. H. FURNELL said that he was interested in the extremely low hæmoglobin value in the case under discussion; he thought that it must be related to the heart condition.

DR. ROBERT SOUTHBY congratulated Dr. Sobey on the excellent outcome in the case. He asked whether a Wassermann test had been carried out, and whether dilute hydrochloric acid had been given during the trial of oral iron therapy.

DR. W. G. MILLER wondered whether the heart failure might have been initiated by a pulmonary thrombus rather than an embolism. Pulmonary congestion would be a predisposing cause for that.

DR. REID thought that if an embolism had occurred, then it should have been possible to find the site of the thrombosis in the leg.

DR. A. T. PARK demonstrated X-ray films which showed atelectasis at the base of the right lung. He said that he could not be sure whether infarction was present.

DR. FITZPATRICK thought that the patient might improve still further. He said that in his opinion it would be unwise to decide at that stage whether another pregnancy could be allowed or not.

DR. C. B. BERRYMAN congratulated all those who had persisted in not having the pregnancy terminated.

DR. G. FORSYTH said that in many cases of secondary anæmia, hæmorrhage could be a cause. There appeared to be no evidence of it in the case under discussion, but he still thought that it might have been a contributory cause. The anæmia would precipitate the heart failure in the presence of an underlying heart lesion.

Dr. Sobey, in reply, said that no Wassermann test had been performed; dilute hydrochloric acid had been tried without avail during iron therapy. He thought that pulmonary thrombosis might well have been an ætiological cause of the radiological findings. He also thought that the prognosis was poor.

Osteomalacia due to Tubular Dysfunction.

DR. W. G. MILLER showed a female patient, aged sixty years, who in 1948 had complained of pain in the right lower part of the chest anteriorly, and of general weakness. Her previous medical history was as follows. She had undergone a right mastectomy twenty years previously, and she had suffered from menorrhagia due to *fibrosis uteri*, from hypertension (blood pressure 190 millimetres of mercury, systolic, and 100 millimetres, diastolic), and from possible cholecystitis (a cholecystographic examination revealed no abnormality). In the subsequent four years she complained frequently of "rheumatic" pain in various parts of the body—the right side of the chest, the back, the right hip, the thighs and the ankles. She felt weak in the legs, lacked energy and easily became exhausted. It was noted that she bruised rather easily and was subject to epistaxis. In January, 1951, she had a rather brassy, dry cough; an X-ray examination of her chest revealed no abnormality. An electrocardiogram revealed a right bundle branch block. In May, 1952, coughing and deep breathing aggravated the pain in the right side of the chest to which she was subject; she was paler than normal. A blood examination gave the following information: the erythrocytes numbered 2,600,000 per cubic millimetre, the hæmoglobin value was 83% (12 grammes *per centum*) and the colour index was 1·6; the leucocytes numbered 4300 per cubic millimetre, 57% being neutrophile cells, 1% eosinophile cells, 38% lymphocytes and 4% monocytes. Examination of a blood film revealed macrocytosis with anisocytosis and poikilocytosis. A test meal examination revealed a deficiency of hydrochloric acid.

In June, 1952, after liver injections, a blood examination revealed that the erythrocytes numbered 4,000,000 per cubic millimetre, 2·5% being reticulocytes, and the hæmoglobin value was 85%; the leucocytes numbered 7600 per cubic millimetre. She was treated with liver injections until September 16, when she complained of band-like pains, a feeling of "tightness" at the level of the ninth and tenth thoracic vertebræ, more severe on the right side than on the left, and shooting pains in the legs. Formerly she had had weakness in the legs, which had decreased. X-ray examination of the lower dorsal segment of the spine revealed minor antero-lateral lipping on the bodies of the lower lumbar vertebræ; it was also thought that there was slight narrowing of the seventh to ninth thoracic disks. Lumbar puncture and a Queckenstedt test revealed no abnormality.

On October 7 a chronic cough prompted another X-ray examination of the chest, which revealed no abnormality except for changes in the spine—lipping and slight narrowing of disk spaces in the mid-thoracic region.

On January 3, 1953, the patient complained of band-like feelings—a "nervy" feeling around the lower ribs on both sides. She said that her legs were very weak, that her leg muscles felt stiff when she moved, and that she had tingling in the tips of her fingers. She seemed to walk with difficulty. Once more a lumbar puncture and the Queckenstedt test revealed no abnormality. A blood examination gave the following information: the erythrocytes numbered 3,850,000 per cubic millimetre and the hæmoglobin value was 78% (11·3 grammes *per centum*); the leucocytes numbered 5750 per cubic millimetre, 48% being neutrophile cells, 6% eosinophile cells, 40% lymphocytes and 6% monocytes; examination of a blood film revealed moderately severe anisocytosis and poikilocytosis. On March 6, 1953, a further blood examination revealed that the erythrocytes now numbered 4,400,000 per cubic millimetre and the hæmoglobin value had risen to 90% (13·1 grammes *per centum*). On March 31, although the girdle pain was very severe, the only new clinical sign was hyperæsthesia over the ninth and tenth thoracic segmental area on the right side. Her lower limbs became powerless at times, and she had much pain around the right hip. Sudden movement of the hips produced pain. On examination of the patient no sensory changes were detected; there was no apparent weakness or wasting of muscles, and the reflexes were normal.

In May, 1953, the patient was referred for a neurological examination, which revealed no abnormality; in particular

there were no physical signs of subacute combined degeneration or of spinal cord compression. No myelographic examination was made at the time. An orthopædic surgeon thought that the arthritis in the sacro-iliac joints and the spine was sufficiently severe to cause her pain and difficulty in getting about. It was thought that malignant disease was a possibility. In September she became much more disabled and had difficulty in walking; all muscle movements seemed to cause pain. Severe pain was present in the right lower part of the chest. A myeclographic examination revealed some irregularity in the lower thoracic region. The neurosurgeon decided against exploratory operation. In November she received deep X-ray therapy to her back, and a biopsy of a rib was performed. In December the hæmoglobin value of her blood was found to be 55%; liver injections had been given less frequently because of doubt about the diagnosis of pernicious anæmia.

On March 10 a trial of treatment with "Butazolidin" was undertaken, one tablet being given twice a day. From May 9 to 17 the patient had painless hæmaturia, with no apparent response to vitamin *K* therapy. It was thought that the "Butazolidin" might have been responsible. By November her condition had deteriorated so far that she was almost bed-ridden, being able to walk only with great difficulty with the aid of a walking-stick. It seemed that the major disability was in the pelvic girdle; the pain there was more severe than in the thoracic region. X-ray examination revealed a number of osteoporotic areas and atrophic arthritis in both sacro-iliac joints, as well as another fractured rib.

The patient was referred to the Alfred Hospital Clinical Research Unit for investigation. The combination of aches and pains of skeletal origin, pathological fractures and the typical biochemical pattern of hyperchlorræmia and acidosis with a greatly raised serum alkaline phosphatase content, indicated that she was suffering from osteomalacia due to a renal lesion. The renal defect was thought likely to be tubular, and associated with the inability to effect an adequate exchange of hydrogen for sodium in the renal tubule, with resultant excessive loss of bicarbonate and fixed base. The only features of the syndrome missing from the case under discussion were nephrocalcinosis and extreme hypocalcæmia.

Dr. Miller said that the importance of recognizing the syndrome was that it was amenable to treatment. The acidosis could be corrected by the administration of sodium citrate and citric acid, or other alkalis. With the correction of the acidosis there was usually relief of bone pain, ultimately followed by some recalcification of the affected bones. To hasten the process it was worth while giving additional calcium and vitamin D_2. The patient under discussion was given 100 milliequivalents of sodium per day in the form of disodium hydrogen citrate, about 60,000 international units of vitamin D_2 per day, and calcium gluconate, 20 milligrammes three times a day. By March, 1955, great clinical improvement was evident, and the patient had no pain at all. Apart from some instability on her feet, she could now do most of the things that she had been able to do before her illness.

Dr. Miller then showed charts demonstrating Albright's syndrome and the electrolytic changes which occurred with treatment. He also showed another chart on which were set out the various syndromes associated with renal defects of reabsorption.

Dr. Park discussed the difference between osteoporosis and osteomalacia. He said that in the former there was increased osteoclastic activity, whilst in the latter the defect was in the final ossification, so that more osteoid tissue was formed. He pointed out that the two conditions could coexist. Dr. Park went on to describe the various causes of osteomalacia with special emphasis on the renal lesions. He said that the X-ray changes were of two types: (i) increased radiolucency with coarse trabeculæ; (ii) apparently normal bone, but multiple pseudo-fractures which could be very difficult to see. The fractures were associated with pain; they healed but slowly and with very little callus. Dr. Park pointed out that the first type of radiological change was probably due to long-standing mild renal disease, while the second type was more severe and acute. Radiology often presented difficulties, but could be of help in prognosis and treatment.

Dr. Reid pointed out that the patient had blue sclerotics, and that they could be seen in any condition in which extreme decalcification was present. He was reminded of a syndrome called pseudo-Albright's syndrome, which might be cured by cortisone.

DR. JENS pointed out that no mention had been made of post-menopausal osteoporosis. He said that hormone therapy was of great value in those cases.

DR. KELLY congratulated Dr. Miller on his perseverance. Dr. Kelly believed that if any patient had pain severe enough to make him ill, then that pain was always organic.

DR. H. I. HOLMES said that the patient was living in a "milk country". In many areas a large amount of superphosphate was being used, and he wondered whether that might affect the milk supply and so humans.

DR. SOUTHBY agreed with Dr. Holmes that a careful inquiry should be made into that question.

DR. BERRYMAN asked why women from that area were often deficient in their milk supply.

Dr. Miller, in reply, said that he had purposely not discussed osteoporosis. He paid a tribute to Dr. A. E. Brauer, and to Dr. A. M. Hutson, of the Alfred Hospital.

Recent Trends in the Treatment of Fractures.

DR. E. E. PRICE read a paper entitled "Recent Trends in the Treatment of Fractures" (see page 9).

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

CONTAGION OF PHTHISIS.[1]

LAENNEC, one day in sawing through some tuberculous vertebræ, injured one of his fingers; in consequence, there formed at the part a little tumour about the size of a cherry-stone, which was fixed in the thickness of the skin. In about eight days' time the skin broke and gave issue to a little yellow, firmish body, exactly resembling yellow tubercle. The wound rapidly healed, and Laennec never experienced any further inconvenience from it. In this anecdote Dr. Lamarre finds a confirmation of his belief that phthisis is contagious, and that Laennec inoculated himself with the disease of which he died.[2]

Correspondence.

THE RESERPINE ANTI-HYPERTENSIVE DRUGS.

SIR: There seems little doubt that the so-called anti-hypertensive drugs such as "Serpasil", "Sertensin", "Sertina" *et cetera*, compounded from reserpine, the active principle of the root of the Rauwolfia plant, have a very definite place in the symptomatic treatment of hypertension. (And, incidentally, I hope that by anti-hypertensive we only mean that the drug has the capacity to lower blood pressure and possibly produce some sedative effect.) In certain cases these drugs may be invaluable in producing symptomatic relief in hypertension, but they must be used with discretion and under the closest supervision. It would appear that it is dangerous to prescribe them in any way indiscriminately or casually.

For some time now some of my psychiatric colleagues and I have been concerned about certain side effects which may be produced by these drugs. They are not uncommon and may even be dangerous. The side effects range from a general mental and physical retardation or slowing up, a rather alarming increase in weight, or an unhappy somnolence, to a grossly agitated type of depression, which may even be terminated by suicide. The mental and physical retardation is described as flatness and inertia, and these patients claim that they feel physically wretched. The increase in weight is alarming to the patient, because although he has not increased his food intake, he experiences a feeling of "fatness", and he confirms his gain in weight on the scales. The somnolence can be very marked, and many patients tend to fall asleep whenever they sit down and relax, particularly after food. The depression follows the usual pattern of an agitated depressive illness, except

[1] *Australian M. J.*, Volume IV, 1859, page 232.

[2] This is probably one of the earliest descriptions of what is in fact a Mantoux reaction. It was taken from a journal which was not named.

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perhaps that there may be a querulous quality in the agitation, and unlike the usual depressive, the patient not infrequently says that he "feels bad". The patient entertains thoughts of suicide, and I know of many cases who have made attempts or who have actually committed suicide.

One tends to see these side effects mostly in the ambulatory case, where dosage has perhaps been excessive or over-prolonged. I do not think it is generally recognized how critical individual dosage may be, or how variable the day-to-day response of the individual patient. Consequently it can be dangerous to place the patient on a previously estimated maintenance dose without insisting on the closest supervision. Many patients become somnolent, retarded and querulous when ambulant, on only two 0·25 milligramme tablets a day or even on only one tablet a day. They may fall into a deep depression. One even sees these patients struggling to remain at work, and even to drive their cars, whilst taking these pills.

I imagine that the drug acts centrally, probably in the hypothalamic region. It appears to be a depressant, and no doubt it is this that causes the so-called tranquillizing effect. The increase in weight with the usual food intake suggests a disturbance of water balance, and that it is due to water retention. In a recent case it amounted to twelve pounds in a couple of weeks. Normal weight is regained with suspension of the drug.

I was provoked into writing this letter largely because of the increasing number of cases which my colleagues and I have seen with serious side effects, most important, of course, being those suffering from a depressive illness. I was further provoked when some weeks ago a colleague rang me to ask my opinion of these drugs, the reason for his inquiry being that he had four patients on this drug, one of whom had attempted suicide, while the other three were each in a depressive state and entertained suicidal ideas. But more particularly perhaps because it would appear that this drug is now prescribed extensively for hypertensive patients in a rather casual fashion in bottles of a hundred, the patient invited to take one three or four times a day and advised to "come and see me in three or four weeks' time". If an effect is not achieved in ten days' time, the general idea seems to be to double the dose.

It seems that this drug is prescribed for all types of hypertension, including the intermittent and remittent types, the "sustained benign without symptoms type of hypertension" and even for the aged. This is not surprising, as it is advocated in some of the literature which accompanies the drug. I was under the impression that the modern teaching in regard to the treatment of these forms of hypertensive disease came under the headings of general management, including a need to keep the patient in ignorance of the fact that he has a hypertension, an attempt to persuade him to adopt a more philosophical and easy-going attitude to life, and last, but not least perhaps, to prescribe phenobarbital. And I suggest that the symptomless or accidentally discovered hypertensive should be left strictly alone. I suggest further that this drug should be used more specifically for the sustained benign hypertensive with symptoms, and for the pre-malignant and the malignant forms of the disease—and not, of course, for the aged. Perhaps stabilization attempts should be made at first in hospital or at bed rest And when a maintenance dose has been arrived at, I maintain that the closest supervision should be exercised, as the patient's tolerance for the drug is at all times variable and the systolic pressure under its influence extremely labile. Under this drug I have known systolic pressure to fluctuate up to 120 millimetres of mercury.

It is imperative that notice be taken of any change in the patient's usual mood, because it seems to me that it is the type of patient subject to mood disturbances who so readily falls into a serious depressive state. It appears that the reserpine type of drug can precipitate a depressive illness in the manic-depressive type of temperament. Further, these patients frequently have a degree of hypertension, and it happens not uncommonly that the early symptoms of an agitated depressive disturbance are not recognized. The systolic pressures of these patients are frequently raised quite markedly; the case is treated as one of hypertension, and reserpine is prescribed with disastrous results.

It may be that the psychiatrist sees most of these cases, and I am quite prepared to accept the fact that reserpine depressives are not as common as I believe. However, I have seen so many now that it has become routine with me to ask all my middle and later-life depressives if they are taking reserpine. My most recent experience seems excessive, as it consists of three cases within twenty-four hours, one of them with a self-inflicted six-inch incision in her neck.

I believe that reserpine may be a very useful drug, and my main reason for ventilating these unfortunate facts is that I believe that with proper selection and careful supervision these side effects need not occur. And, moreover, they are not mentioned in the literature that accompanies the drugs.

In these days it would seem easier to discover a new drug than to understand how it use it, and I think it may be a long time before we come to an understanding of the overall clinical implications of the use of the reserpine type of drug, and perhaps of many others in high favour at the moment. Possibly it would be better for us to think more about prophylaxis in medicine than in terms of Utopia of specific drugs for the treatment of symptoms.

Yours, etc.,

135 Macquarie Street, Sydney,
June 2, 1955.

CEDRIC SWANTON.

THE USE OF PAS IN RHEUMATOID ARTHRITIS.

SIR: I have been following with some interest the argument which has been taking place in your correspondence columns under the above heading. I would like to associate myself with the views expressed by Dr. Wing and Dr. Shanasy.

In a very small pilot series of patients tested at this hospital, I was quite unable to convince myself of any beneficial effect resulting from the administration of PAS; in fact the patients did better on the blank (lactose) than on PAS. I would like to make a further point, that in the assessment of any therapeutic agent in this disorder it is essential to test it over a prolonged period of time (at least two years in my opinion), in order to try to control the variable factor of spontaneous remissions and exacerbations. The pattern of any patient's disorder should be assessed, if possible, and the trial continued for a much longer period than their past pattern of spontaneous remissions.

I entirely agree with Dr. Shanasy's last paragraph. I have recently had similar experiences following the publication of an article in the December issue of *The New Zealand Medical Journal*. Following this, a paragraph appeared in the various New Zealand newspapers, and this resulted in a flood of letters from patients, or the relatives of patients, who had jumped to the conclusion that the article described a new wonder cure, whereas no such claim was made in the original article.

Yours, etc.,

T. C. HIGHTON,
Research Medical Officer.

Queen Elizabeth Hospital,
Rotorua,
New Zealand.
May 27, 1955.

THE PATHOGENESIS OF BRONCHIAL CARCINOMA.

SIR: In the May 14 edition of the journal appeared an interesting article on "The Pathogenesis of Bronchial Carcinoma" by Dr. Maynard Rennie. There are certain suggestions I would like to make *re* lung carcinoma and malignancy in general which may be worth considering. It is well recognized that a great many things are capable of producing malignancy. This very fact leads one to think that it is not the individual irritant that is the basic factor, but that the causation of malignancy is the failure of some mechanism that has failed in dealing with many types of irritants. It is well known that chronic infection is one of the most common causes which may lead to malignancy. Again tar products have long been known as a favourite method of producing malignancy in rats, which naturally leads one to assume that the inhalation of tobacco smoke may produce the same condition, and no doubt it does to a certain extent, but there is another factor which needs a great deal of consideration. Sinusitis at the present day, particularly in Australia, is such a widespread complaint that statistics I made at Saint Vincent's Hospital some years ago showed that 25% of all people seeking treatment for any cause were suffering from it, and in fact every fourth person walking into any doctor's consulting room is suffering from that condition, which in the majority of cases is completely overlooked. In screening the lungs of these patients or taking films of their chests, hilus thickening will be found in almost all of these cases. This thickening is due to infection spreading down the glands in the posterior

triangle of the neck which drain the sinuses to the mediastinal glands and branching out along the bronchial tubes. Here we have a chronic infection in the lungs for years and add to that some tar product; what better condition could one have for the starting of malignancy? But my personal opinion would be that the chronic infection was the major factor. Has anybody tried to ascertain if sinusitis is present in such cases? One might also ask if anybody has been able to find an asthmatic or an epileptic or a case of chronic bronchitis or bronchiectasis without sinusitis? As a final suggestion to support the part played by chronic infection in malignancy, has anybody ever found a malignant cervix in a virgin?

Yours, etc.,

Ballarat, Victoria, Undated. SYDNEY PERN.

LEPTOSPIROSIS IN NEW GUINEA.

SIR: Your article on leptospirosis in New Guinea in "Current Comment", May 21, 1955, implies that this disease has not been diagnosed in New Guinea. I was medical officer at Wewak in 1935-1936 and had occasion to report a number of cases in routine reports. The records, of course, were all lost during the war. The cases in natives came from various parts of the district, mainly where alluvial gold was being worked. It was assumed that the reservoir was the common introduced rat.

The cases were diagnosed first by dark-ground examination of centrifuged urine and later by examination of subconjunctival exudate in the same way. This was extracted with a syringe and small needle under cocaine and proved very reliable in early cases when conjunctival injection was present. This latter incidentally is a useful clinical lead to the diagnosis of this disease.

Yours, etc.,

Department of Public Health, Flinders House, 17-19 Flinders Street, Adelaide. C. M. DELAND.
May 27, 1955.

THE ADVERTISING OF DRUGS.

SIR: There is nothing more irritating than to read one of the advertisements in THE MEDICAL JOURNAL OF AUSTRALIA *re* some drug which would be very suitable to some case under treatment and find that no mention is made in the advertisement whether it (the drug) is presented in a liquid or a solid, and dosage.

Yours, etc.,

68 Day Terrace, West Croydon, South Australia. W. F. S. WEBB.
May 12, 1955.

THE RÖNTGEN ORATION.

SIR: Dr. O'Day in his letter of May 28 has taken Dr. Darling to task in his Röntgen Oration "On Looking Beneath the Surface of Things" for suggesting a reconciliation between religion and science. In doing so, Dr. O'Day seems to imply that in this "scientific" era the worship of science should wholly take the place of worship of what he calls "old nonsense". That this was a common scientific attitude does not excuse his error, but it does show a limited understanding Dr. Darling said in this lecture (M. J. AUSTRALIA, April 16) that "the scientist can no more deny or devaluate the truths of spiritual experience than the theologian can neglect the truths of science; and the two truths must be reconcilable, and it must be of importance to us that they should be reconciled".

To this Dr. O'Day objects. We are scientists he suggests We know nothing of spiritual matters or the "old nonsense". We must therefore reject them and concentrate only on what science can teach us. Such is his intolerance; and such is his misfortune, for this attitude is merely the legacy of the turn of the century optimism when man thought he was fair to becoming the master of all things. It is not tenable today.

That this optimism was false recent events have shown. Physicists have admitted that their interpretation of the world is only partial and arbitrary and can never be anything more than such as can be included in a description of a time-space continuum. Philosophers, too, of a positive persuasion, have admitted to their logical analysis only such questions as their cold inquiries can be trusted to resolve. Ultimate questions they have left to the theologians and the religious philosophers, since these questions, they now recognize, are worthy of a religious interpretation. They have done this because, now that the limitations of science are apparent—limitations for which science itself has been responsible—a Cartesian dualism is no longer tenable.

The religious philosophers, in their turn, have shown that we can no longer afford, as we have done till recently, to dissociate science from religion, to think of one as fact and the other as fancy. Such a simple dichotomy is no more feasible, save as a useful working hypothesis, than imagining man as composed of two separate entities, body and soul, when in truth he is a microcosm within a macrocosm or a lesser whole who is part of a greater whole. That is the paradox to be resolved. Indeed, the truth is not that science is proven and religion unproven, but that whilst one, being in the first instance wholly intellectual, is self-evident and, using its own terms, can be described and can describe its discoveries in these terms, the other, being transcendant of these limitations, using other faculties of feeling, needs to use both symbol and poetry to make its meaning understood. This meaning is necessarily less precise; and we should be grateful that it is so. Yet it is cogent enough.

To deny this power of poetry is therefore to deny the power of religion; and to deny science also, at its best, the use of such intuitive leaps by which it has progressed is to make science arid. For science alone is only capable of explaining what science can explain. It expects no revelation. A can only evince A; it cannot obviously explain A. It deals with concepts and abstractions. It cannot therefore explain God, because God is not a concept but a reality. These limitations must be recognized. If they are not, the scientist is in danger of becoming complacent and dangerous to mankind simply because such false security leads to the terrifying doctrine of the end justifying the means, of which Western Europe has so long been guilty and to which Communism still blindly adheres.

The danger lies in the fact that such a doctrine leads to "object" thinking and the depersonalization of the individual. He is considered as an object for study or decimation, not as an unique and unrepeatable entity as Christianity has always taught and still teaches. And it is in countering this dehumanizing, totalitarian tendency that the teaching of Christian existentialism or personalism has been such a welcome force. Discarding the dualism of academic philosophy, it has expounded the primacy of man as existent over the idea of man as essence, and has also stressed his relation to God, his ability to make in such deep relationships and with his fellow men an experience of infinite worth, not amenable to scientific description, yet none the less valid and necessary for his full development, physical and moral and spiritual.

The cogency of such teachings has also been largely responsible recently in displacing the authoritarian or autocratic view of God and the Scriptures which appears to be often still held by those people who, having come to hate and resent an unreasonable and harsh father, under whom they have suffered, have come to attribute to God such awful and impossible injustice. But instead of the Hebraic God of wrath there is the Christian God of spirit and love which science and religion together, if they are reconciled, as Dr. Darling and most of us who are not sworn to subversive ends would have them reconciled, may hope to embrace. Only ignorance and prejudice stand between such reconciliation.

To this end, then, rather than reject mysticism and stick to science, as Dr. O'Day naïvely suggests, we should gladly accept the whole challenge offered to us. We should appreciate that mysticism, far from being fantasy or wishful thinking, is an awareness and admission of mystery and a seeking towards a greater understanding of life which, in turn, gives a life of greater understanding. We should not spurn either our natural or our supernatural gifts since we have them both.

We should study science and religion and be ourselves reconciled. Together they constitute a proper study of mankind. As doctors we must not be scientists only. We must also be counsellors and seekers after the truth. Let us not compartmentalize our knowledge and become obstinate specialists. For complacency we should substitute a proper

attitude of humility, because as Dr. R. O. Moon once said: "If we only know Medicine we don't know that."

Yours, etc.,

Montrose, Victoria, May 31, 1955. PHILIP LANGTON-LOCKTON.

HYDATID CYST OF THE ORBIT: REPORT OF A CASE.

SIR: I would like to comment on an inaccuracy which appeared in Dr. Kelvin Lidgett's case report on orbital hydatid (M. J. AUSTRALIA, May 28, 1955). He has repeated Hamilton's erroneous statement made in 1952 that only one case of orbital hydatid had been recorded in Australia. Since 1865 and up to 1952, eight cases had been recorded, two of these since Pockley's case in 1916—namely, Gardner (1924) and Miller and Dowling (1947). In 1954 I reported a case before the Ophthalmological Society of Australia, and this will appear in Volume 14 of that society's transactions now in the press. Including Dr. Lidgett's case there have been eleven cases. It is a pity that an otherwise interesting case report is marred by this inaccuracy, which without contradiction would tend to be perpetuated.

Yours, etc.,

193 Macquarie Street, Sydney, May 30, 1955. R. HERTZBERG.

TWO CASES RESEMBLING PELLAGRA.

SIR: Several cases resembling pellagra have been noted in Queenstown, Tasmania; brief notes on two such cases are quoted herewith. These patients have had a rash confined to the exposed parts only. The rash has been usually less marked on the legs, as these have ordinarily been covered with thin stockings. Queenstown in the early parts of the year has a variable type of weather; frequently there is cloud, sometimes with rain; but just before the time when these pellagra-like cases occurred there were clear sunny skies.

Mrs. N.: Her illness began with a rash on the face. A few days later other exposed parts of the patient were affected. The legs were less affected than the arms.

Mrs. B.: This patient, living in the same area, was similarly affected. The rash, closely resembling that seen in pellagra, appeared only on exposed parts, or parts thinly clad.

No drugs which may have sensitized the skin had been taken.

Yours, etc.,

New Norfolk, Tasmania, May 30, 1955. S. J. CANTOR.

COMPULSORY BLOOD TESTS FOR ALCOHOL.

SIR: The following may be of interest to both the proponents and opponents of compulsory blood tests in cases of alleged drunken driving.

Here recently a road accident occurred and two men on a motor cycle were killed—one instantly, and the other died a day or two later. The driver of the car involved was arrested and charged with drunken driving. The doctor who examined and treated the injured persons was also called in by the police at the driver's request to examine him as regards his state of fitness to drive. The driver cheerfully agreed to submit to a blood test. The blood was accordingly taken, sealed *et cetera* in the proper manner and handed to the police. They refused to have anything to do with it. The doctor considered that he had done his duty and that it was not his responsibility to forward the sample and have it tested at his own expense. He put the sample in the refrigerator for the time being and consulted the local magistrate, who said that he—the magistrate—had no authority to deal with it. It was then offered to the accused's solicitor, who, naturally recognizing it as potential dynamite, also rejected it. The sample was subsequently thrown out by a member of the doctor's household.

At the inquest and later at the Supreme Court trial neither the magistrate nor the judge evinced the slightest interest in the blood sample, and the doctor who mentioned it in his evidence was not even asked what became of it.

The car driver was convicted of manslaughter, as apparently there was little doubt about his state at the time of the accident, but one wonders whether the same lack of interest would be evinced in a more doubtful case and also if this lack of interest is the rule throughout Australia.

Yours, etc.,

75 Duke Street, Northam, Western Australia. May 30, 1955. L. D. HODBY.

REGISTRATION OF MEDICAL PRACTITIONERS.

SIR: As a medical practitioner registered in 1924 in the medical register of the United Kingdom (England), I was admitted to the medical register of a sovereign country in the Middle East, and on payment of the entrance fee my name was retained on that register for twenty-five years. At the same time, without additional fee, it remained and still remains on the English register, only one inquiry having been made in the meantime as to my whereabouts.

On coming to Australia in 1950, by reason of "reciprocity", on payment of the registration fee my name was inscribed on the medical register of New South Wales. My duties took me for three years to the other States of the Commonwealth, but in each one I found that my signature was invalid unless I paid an additional fee to each separate registrar, the only exception being the Territory of Papua and New Guinea, which (heaven be praised) has not yet advanced sufficiently to have a medical register.

Now, being permanently in New South Wales, I am informed by the Registrar that I must pay him an annual fee to retain my name on his register; otherwise I shall go the way of the gaol-bird, infanticide, criminal abortionist and all those guilty of "infamous conduct in a professional sense", and my name will be removed.

Sir, is it not time to call a halt to this petty provincialism and pettifogging bureaucracy? I suggest that the Commonwealth Government Health Department compile a medical register for all Australia, and that one fee be charged on entrance and in perpetuity.

Yours, etc.,

Wahroonga, New South Wales, May 31, 1955. H. E. HARGREAVES.

CLASSIFICATION OF RHEUMATOID ARTHRITIS.

SIR: Dr. Michael Kelly's warning against a slavish adherence to a rigid classification of the rheumatic diseases is timely and reasonable (M. J. AUSTRALIA, May 28). Dr. Naomi Wing, on the other hand, considers that unless standard criteria of diagnosis and treatment be recognized, little progress can be made (M. J. AUSTRALIA, April 16).

Surely all progress is rather the outcome of vision and experiment. True classification of disease can only be based on fundamental pathology, and as our knowledge of this process in the rheumatic diseases is incomplete, any attempted classification should be broad, simple and designed only to indicate some distinctive features or recognized line of treatment for a particular group.

It is not improbable that future research will disclose all rheumatic disease as the outcome of the one basic pathology, and it is essential in the meantime that we keep open minds and, as Dr. Kelly so aptly puts it, consider all terms used in our classifications as purely tentative and devoid of real meaning.

Yours, etc.,

440 King William Street, Adelaide, June 1, 1955. J. F. DREW.

LIP MUCOSAL CHANGES IN SMOKERS.

SIR: It has been noted at Burnie, on the north coast of Tasmania, that the greater number of heavy smokers show changes in the mucous membrane of the lower lip at the site where the cigarette is usually held. Changes are noted in the cells of the sputum in a proportion of these smokers. Non-smokers and most light smokers show no abnormality in the mucous membrane of the lower lip or in the sputum cells.

At Queenstown, near the west coast of Tasmania, smokers (including heavy smokers) very rarely, if ever, show changes in the lip mucosa or in the respiratory tract (sputum) cells.

Burnie and Queenstown are little more than a hundred miles apart in a direct line; the former is a seaport, the latter is a mining town; the main metal mined is copper. It is possible that sulphur fumes from the smelters may protect the body cells from damage, including pre-cancerous and cancerous change. Such latter changes have been noted in smokers in Burnie and elsewhere in Tasmania, but not in Queenstown.

Yours, etc.,

New Norfolk, Tasmania, May 28, 1955. S. J. CANTOR.

The College of General Practitioners.

NEW SOUTH WALES FACULTY.

THE following report is published at the request of the chairman of the New South Wales Faculty of the College of General Practitioners.

The College of General Practitioners in New South Wales is making steady progress and new members are enrolling each week. Reports from the Queensland Faculty are also very encouraging. The splendid report of Dr. Paul Hopkins (Provost of Queensland Faculty) in THE MEDICAL JOURNAL OF AUSTRALIA, May 21, 1955, must surely give a stimulus to general practitioner research and is an example for others to follow. Our Faculty is at present collecting information from members for Professor B. Mayes on the incidence of eclampsia.

News from Perth is that they have formed a general practitioner group and are making preparations to form a Faculty of the College in Western Australia. Those interested should contact Dr. Dixie Clement, Hay Street, West Perth, Western Australia.

Dr. Talbot Rogers from England will be attending the Australasian Medical Congress (British Medical Association) in Sydney next August as the official representative of the British Medical Association. He is also a committee member of the College of General Practitioners and has consented to attend a meeting of members of the College at that time. Officials from the Queensland Faculty will also be present at this meeting as well as members from other States. It is expected that steps will then be taken to form an Australian Council of the College.

On August 23 (in Congress week) a late afternoon party will be held by the New South Wales Faculty, and it is hoped that as well as official representatives of other bodies, many general practitioners will be present.

Membership of the College.

There still seems to be some doubt as to how medical practitioners can join the College and the conditions of membership.

Membership.—A duly registered medical practitioner who has been qualified for seven years and been in general practice for at least five years is eligible for membership. He must be proposed and seconded by members of the College (who are not in partnership with each other), must be held in high esteem and be of good repute. He must give an undertaking to attend regular post-graduate courses of instruction while in active general practice. The present difficulty in obtaining *locum tenentes* restricts the attendance to week-end courses or those of a week's duration. A candidate for admission to the College may be required to attend before a censorship committee.

Associateship.—Any duly qualified medical practitioner may apply for associate membership if he gives an undertaking to carry on post-graduate work if he enters general practice. If he is not registered within two years of being qualified his associateship will automatically be terminated.

The aims of the College, as has been formerly stated, are academic and not medico-political. All members of the College must attain and maintain a high standard of practice. Eventually it is anticipated that members will be given a title, such as M.C.G.P., and no doubt, in due course, the College will become a Royal College. The recognition of the status of general practitioners is long overdue.

Correspondence can be addressed to Dr. H. M. Saxby, Honorary Secretary, College of General Practitioners, New South Wales Faculty, 131 Macquarie Street, Sydney.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Numbers 18 and 19, of April 21 and 28, 1955.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Confirmation in Rank.—Surgeon Lieutenant (for Short Service) (on probation) Michael Francis Bennett is confirmed in the rank of Surgeon Lieutenant (for Short Service), with seniority in rank of 2nd December, 1953.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Appointment.—Albert Pfeifer is appointed Surgeon Lieutenant, dated 14th February, 1955.

AUSTRALIAN MILITARY FORCES.

Australian Regular Army.

Royal Australian Army Medical Corps (Medical).

4/8036 Captain R. J. Pyne is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Central Command), 18th February, 1955.

Citizen Military Forces.

Eastern Command.

Royal Australian Army Medical Corps (Medical).—To be Majors, 10th March, 1955: Captains (Temporary Majors) 2/100752 R. D. Rothfield and 2/115677 M. T. Havyatt, and 2/146576 Captain C. A. Rigg. To be Temporary Major, 11th March, 1955: 2/127883 Captain J. T. Dunn. The provisional ranks of the following officers are confirmed: Captains 2/127046 R. K. Reid and 2/130110 F. M. Grace.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps (Medical).

Northern Command.—To be Honorary Captains: Benjamin Coplan Cohney, 25th February, 1955, and George Durward Fielding and David Frederick Hogg, 28th February, 1955.

Eastern Command.—To be Honorary Captain, 8th March, 1955: Ian Lyall Thompson. To be Honorary Captain, 8th February, 1955: Joseph Alexis Carlin Brassil. (In lieu of the notification respecting this officer which appeared in Executive Minute No. 53 of 1955, promulgated in *Commonwealth Gazette* No. 14 of 1955.)

Southern Command.—To be Honorary Captains, 1st February, 1955: Malcolm Roy Phillips, Bruce Benjamin Errey, and Bruce Walter Fox. The resignation of Honorary Captain I. G. Nichol of his commission is accepted, 9th February, 1955.

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force.

Medical Branch.

Flight Lieutenant Walter Henry Koschade (0311673) is transferred from the Reserve and appointed to a short service commission, on probation for a period of twelve months, 14th October, 1954.

The following are appointed to a short service commission, on probation for a period of twelve months, with the rank of Flight Lieutenant: Alan Cameron (039928), 16th February, 1955; Robert Leon Huppert (039929), 17th February, 1955.

The resignation of Flight Lieutenant W. Buckingham (025670) is accepted, 21st February, 1955.

William Blake (014736) is appointed to a short service commission, on probation for a period of twelve months, 28th February, 1955, with the rank of Flight Lieutenant.

Air Force Reserve.

Medical Branch.

Flying Officer W. J. Bishop (0210441) is transferred from the General Duties Branch and is promoted to the rank of Flight Lieutenant, 10th February, 1955.

The following are appointed to a commission with the rank of Flight Lieutenant (Temporary Squadron Leader): Ronald Wellesley Greville (257932), 8th October, 1954; Norman Vincent Youngman (277630), 17th December, 1954.

Obituary.

ARCHIBALD JOHN COLLINS.

As this issue of the journal goes to press there comes the news of the sudden death of Sir Archibald John Collins, President of the Federal Council of the British Medical Association in Australia and President-Elect of the Ninth Session of the Australasian Medical Congress (British Medical Association) to be held at Sydney from August 20 to 27, 1955. For some months great anxiety had been held about his health. He had had several coronary crises, but he had recovered from each of them to resume his activities. He would not entertain the idea of resigning from either of his important posts, for he felt that he had an obligation to the profession to carry out the duties entrusted to him. A full account of his career will be published at a later date.

PAUL WANOSTROCHT MITCHELL.

We have received from Dr. C. R. Wiburd the following appreciation of the late Dr. Paul Wanostrocht Mitchell.

Paul Mitchell, who had retired from the Commonwealth Department of Health in 1951, died unexpectedly on January 25, 1955, at Sydney after a relatively minor surgical operation.

He was born at Hobart in 1886. Educated at Launceston Grammar School, he went to Trinity College, Melbourne, for the early years of his medical course, which he completed at Sydney, graduating M.B., Ch.M. in 1914. In 1918 he obtained the Diploma in Public Health at the same university.

He was for a time in practice at Elmore, Victoria. After being rejected for military service for health reasons he joined the Commonwealth Department of Health in 1917 and remained in that service for the next thirty-four years.

He was stationed at Sydney at the end of the 1914-1918 war and was responsible largely for quarantine operations with returning troopships infected with Spanish influenza. After varying periods as quarantine officer at Sydney, Townsville, Melbourne and Newcastle, he was appointed Chief Quarantine Officer (General) in Perth from 1928 to 1934, and was then transferred to Brisbane, where he remained as Chief Quarantine Officer and Deputy Director of Health till his retirement. He married, in 1922, May Agnes Turtle, and his wife's death fourteen years later was a severe blow from which he never really recovered. His only son, Paul, a medical graduate of the University of Queensland in 1948, was at the time of his father's death in England obtaining post-graduate qualifications.

Paul Mitchell was a man who made and kept many friends in the States in which he had lived and worked. He was a pattern of unfailing tact and courtesy in all his official contacts. He was respected and liked by all members of his staff, with whom he was never known to have had a harsh word. He had many interests outside his official duties and was awarded a decoration for his work on behalf of St. John Ambulance Association. He retained his membership of the Queensland Club after leaving that State, and he had been continuously a member of the University Club, Sydney, since his graduation. He had been a member of the Committee of Tropical Physiology and Hygiene of the National Health and Medical Research Council and had continued his association with public health after his retirement, both at Canberra and in New South Wales. He had recently undertaken several trips to Japan as ship's surgeon, a position for which his experience well qualified him, and was looking forward to further useful occupations when his death occurred unexpectedly.

He will long be remembered with affection by his friends in all States, including all those officers of the Commonwealth Department of Health who have at some time had the privilege of working with him.

NORMAN PERN.

We have received from Dr. Sydney Pern the following appreciation of the late Dr. Norman Pern.

Dr. Norman Pern died on May 5, 1955, aged seventy-seven years. He was one of a large family of doctors which, including the father, numbered eight. He was an adventurous soul. Half-way through his medical studies he went off to Klondike, where, like many others, he did no good. For a time he worked in a logging camp and eventually sailed from Portland before the mast on a big four-masted sailing ship with a cargo of wheat. He returned to his studies and was qualified about 1900. He then went to the Boer War and was put in charge of the big refugee camp at Bloemfontein. There he contracted typhoid and a little later paratyphoid. He was highly commended by Lord Milner for his work there. Very shortly after he was joined by my younger brother and myself. After the declaration of peace he worked for a time at the Johannesburg Hospital, but on the uprising of the Zulus in Natal he again joined up in the fighting as well as medical services, as the Zulus did not appreciate the fact that medical men were not supposed to be killed. He then took up some land and did no good with it. He came out to Australia, and being of a roving disposition he practised in various localities, eventually settling in Darlinghurst. He was great on keeping himself fit; whilst at hospital he would think nothing of walking from London to Brighton, setting off at dark and doing his fifty miles, then catching the first train back to London and carrying on with his studies. On one occasion he walked from London to Brighton, a matter of seventy miles, in twenty-two hours. For some time he was the best boxer at Marlborough College, and he played a good game of rugby.

Post-Graduate Work.

THE MELBOURNE MEDICAL POST-GRADUATE COMMITTEE.

PROGRAMME FOR JULY, 1955.

Visit of Professor Ronald Hare.

PROFESSOR RONALD HARE, of London, will be in Melbourne from July 11 to 16. He will give the following lectures:

Monday, July 11, 8.15 p.m., at the Medical Society Hall, Albert Street, East Melbourne, on "Hospitals as Reservoirs of Infection". Thursday, July 14, 8.15 p.m., at the Medical Society Hall, on "The Evolution of Infectious Disease". Friday, July 15, 12.30 p.m., at Royal Melbourne Hospital O.S.A. meeting, on "Changing Aspects of Wound Infection". Saturday, July 16, 8.30 p.m., at British Medical Association meeting at Base Hospital, Bendigo, on "Changing Aspects of Wound Infection".

Fees for the lectures on July 11 and 14 are at the rate of 15s. each, but those who have paid an annual subscription to the committee are invited to attend without further charge.

Professor Hare is bacteriologist at St. Thomas's Hospital Medical School, London. He is noted for his work on hæmolytic streptococcal infections. His tour has been organized by the Australian Post-Graduate Federation in Medicine.

Country Courses.

Mooroopna.—On Saturday, July 16, at Mooroopna, the following lectures will be given: 2.15 p.m., Dr. J. Buchanan, "Vaginal Discharge"; 4.30 p.m., Dr. H. A. Phillips, "Burns". Dr. B. R. Schloeffel, Maud Street, Shepparton, is the local secretary.

Mortlake.—On Saturday, July 16, at Mortlake, the following lectures will be given: 3.30 p.m., Dr. J. D. Hicks, "Recent Advances in Pathology"; 8.30 p.m., Dr. T. E. Lowe, "The Management of Œdema". Dr. W. R. Angus, 214 Koroit Street, Warrnambool, is the local secretary.

Fees.—Fees for these courses are at the rate of 15s. per lecture, but those who have paid an annual subscription to the committee are invited to attend without further charge.

Courses for Higher Qualifications.

Courses already announced will continue for candidates for Parts I and II of higher qualifications.

A course in pathology for primary F.R.A.C.S. candidates will commence at the University of Melbourne at 2 p.m. on June 27, and will continue thereafter at 3 p.m. for six weeks, on Mondays and Wednesdays. The fee for this course is £5 5s.

A course in special pathology for candidates for D.D.R. and M.C.R.A. Part II will commence on Tuesday, July 5, at 4.30 p.m., and continue each week till August 9. The fee for this course is £5 5s., but those who have enrolled for the basic pathology course need pay no further fee.

Address for Inquiries.

The address of the Post-Graduate Committee is 394 Albert Street, East Melbourne, C.2. Telephone: FB 2547.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Course for the Diploma in Clinical Pathology.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that a course for the diploma in clinical pathology will begin in Sydney on July 14, 1955, and conclude in about February, 1956. The course is divided into three groups as follows: group I (pathological anatomy and hæmatology) from July 14, 1955, to January, 1956; group II (bacteriology and parasitology) from September 12, 1955, to February, 1956; group III (biochemistry) from July 19, 1955, to February, 1956. Fees are as follows: all groups in one year, 60 guineas; two groups in first year, 45 guineas; one group in second year, 15 guineas; one group in first year, 34 guineas; two groups in second year, 26 guineas. Those desiring enrolment on this course are requested to communicate with the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, as soon as possible. Telephones: BU 4497-8.

Medical Prizes.

AUSTRALIAN ORTHOPÆDIC ASSOCIATION'S PRIZE.

THE Australian Orthopædic Association will award its prize for 1956 of twenty-five guineas for the best original and unpublished essay on "Any Orthopædic Subject". Entrants for this prize are to be either sixth year medical students or graduates of not more than five years' standing at the date of closure. The essay shall not exceed 5000 words, and if no essay is deemed of sufficient merit, the committee retains the right to withhold the prize. The publication rights of the essay shall belong to the Australian Orthopædic Association.

Essays shall be typewritten with double spacing and should be in triplicate; they should be forwarded under a pseudonym to the Honorary Secretary, Dr. F. H. M. Callow, 141 Missenden Road, Camperdown. A separate sealed envelope should be enclosed containing the name and address of the candidate, together with the pseudonym used. Entries will close on June 30, 1956.

THE AMERICAN DERMATOLOGICAL ASSOCIATION PRIZE ESSAY.

THE American Dermatological Association is again offering a series of prizes for the best essays submitted for original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. The purpose of this contest is to stimulate investigators to original work in these fields. Cash prizes will be awarded as follows: five

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JUNE 11, 1955.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.[2]	Australian Capital Territory.	Australia.[3]
Acute Rheumatism	6(2)	3(2)	2	..	..	..	..	..	11
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	..	..	1	..	..	..	..	..	1
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	6(5)	5(5)	2(2)	..	21(17)	1(1)	..	..	13
Diphtheria	2	1	1	..	..	..	..	..	26
Dysentery (Bacillary)	..	9(2)	7(7)	..	1(1)	..	..	1	18
Encephalitis	1	..	..	1(1)	..	..	..	..	2
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	57(15)	43(20)	..	7(2)	8	1	..	2	118
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	2	..	..	..	2
Leptospirosis	..	..	1	..	..	..	..	..	1
Malaria	..	..	..	..	..	..	..	..	..
Meningococcal Infection	2	2(2)	1	..	1(1)	..	..	..	6
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	7(2)	3	1	2(1)	..	..	..	..	13
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	2(1)	1	2	3(2)	..	..	..	8
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	10(6)	21(13)	31(4)	(1)	2(1)	..	..	..	66
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	101(101)	..	..	..	101
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	30(21)	10(6)	8(1)	8(6)	7(4)	4	..	..	67
Typhoid Fever	21(2)	..	..	..	..	..	..	..	21
Typhus (Flea-, Mite- and Tick-borne)	..	..	3	..	..	..	..	..	3
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

[2] Figures not available.

[3] Figures incomplete owing to absence of returns from Northern Territory.

hundred dollars, four hundred dollars, three hundred dollars and two hundred dollars for first, second, third and fourth place, respectively. Manuscripts typed in English with double spacing and ample margins as for publication, together with illustrations, charts and tables, all of which must be in triplicate, are to be submitted not later than November 15, 1955. The manuscripts should be sent to Dr. J. Lamar Callaway, Secretary, American Dermatological Association, Duke Hospital, Durham, North Carolina. Those which are incomplete in any of the above respects will not be considered. Manuscripts should be limited to ten thousand words or less, and the time of presentation of prize essay shall not exceed thirty minutes. In order to aid fair judgement, papers should be submitted under a *nom de plume* with no information anywhere in the paper as to the institution or clinic where the work was done. Along with the paper by "John Smith", for example, a plain sealed envelope bearing the *nom de plume plus* the full name and address of the author is also submitted.

The results will be announced prior to January 1, 1956; papers not winning a prize become the author's property and will be returned promptly. Any paper which wins a prize becomes the property of the American Dermatological Association. The candidate winning first prize may be invited to present his paper before the annual meeting of the American Dermatological Association with expenses paid in addition to the five hundred dollar prize. Further information regarding this essay contest may be obtained by writing to the Secretary of the American Dermatological Association.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1955, of New South Wales: Brand, Phyllis Lynette, M.B., B.S., 1952 (Univ. Queensland); Liddle, William Warwick John, M.B., B.S., 1952 (Univ. Queensland); Long, Dorothy Mavis, M.B., B.S., 1951 (Univ. Adelaide); Briedis, Antonina, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1955; Feldman, Abram Isaak, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1955; Malecki, Joseph, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1955; Pohl, Hans Joachim, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1955; Vince, John, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1955; Starzecki, Romuald, M.B., B.S., 1955 (Univ. Sydney); Robinson, Joseph Donnan, M.B., B.S., 1951 (Univ. London); Eichel, Ferdinand, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1955 (required to complete twelve months' hospital service in accordance with the provisions of Section 17 (3) of the Act).

The following additional qualifications have been registered in accordance with the *Medical Practitioners Act*, 1938-1955, of New South Wales: Gunther, Carl Ernest Mitchelmore, M.D., 1941 (Univ. Sydney), B.S., 1933 (Univ. Sydney), D.T.M., 1934 (Univ. Sydney), D.T.M. and H. (England), 1950; Lewis, Ronald Gordon, M.R.A.C.P., 1955; McEncroe, Francis John, D.R., 1947 (Univ. Sydney), M.C.R.A., 1949; Strang, Errol James, D.T.M. and H., 1954 (Univ. Sydney); Taylor, Robert Gregory Darnley, F.R.C.S. (Edinburgh), 1954.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Sweeney, Noel Vincent, M.B., B.S., 1953 (Univ. Sydney), 26 Kensington Road, Kensington, New South Wales.

Facer, Kenneth James, M.B., B.S., 1954 (Univ. Sydney), 113 Alison Road, Randwick, New South Wales.

Smith, Dermer Evan, M.B., B.S., 1948 (Univ. Sydney), 6 Nirranda Street, Concord West, New South Wales.

Medical Appointments.

Dr. J. Riley and Dr. R. W. Smith have been appointed resident medical officers for mental institutions in the Hospitals Department of South Australia.

Deaths.

THE following deaths have been announced:

GOODE.—Reginald Alfred Goode, on June 9, 1955, at Adelaide.

HAYES.—Desmond Thomas Matthew Hayes, on June 13, 1955, at Adelaide.

MCKILLOP.—Lachlan Martin McKillop, on June 17, 1955, at Sydney.

GARTON.—David Sydney Garton, on June 20, 1955, at Sydney.

COLLINS.—Archibald John Collins, on June 24, 1955, at Sydney.

Diary for the Month.

JULY 5.—New South Wales Branch, B.M.A.: Council Quarterly.
JULY 6.—Victorian Branch, B.M.A.: Clinical Meeting.
JULY 6.—Western Australian Branch, B.M.A.: Branch Council.
JULY 8.—Tasmanian Branch, B.M.A.: Branch Council.
JULY 12.—New South Wales Branch, B.M.A.: Organization and Science Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all contract practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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